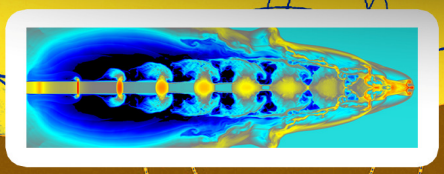
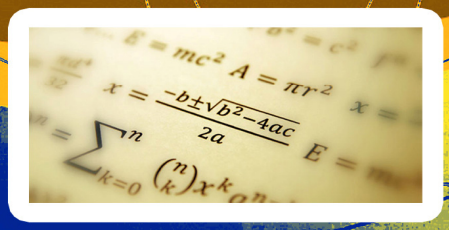
Souvenir





17th Annual Conference of Gwalior Academy of Mathematical Sciences and National Symposium on Computational Mathematics & Information Technology

December 7-9, 2012

(Sponsored by DST, DBT, NBHM, DRDO, CSIR & ISRO)

Organized by

Department of Mathematics & Department of CSE

Jaypee University of Engineering & Technology

A.B Road, Raghogarh, Distt. - Guna (M.P.), India - 473226

Ram Naresh Yadav

RAJ BHAVAN
BHOPAL - 462052

November 22, 2012

MESSAGE

It is a matter of pleasure to know that the Jaypee University of Engineering and Technology, Guna is organizing 17th Annual Conference of Gwalior Academy of Mathematical Sciences and National Symposium on Computational Mathematics and Information Technology from 7-9 December 2012 and also publishing a Souvenir to mark the occasion.

The conference should serve as a platform for exchange on views and experiences and a forum for sharing of knowledge of emerging trends. I hope that the delegates, who are specialized in diverse fields of education, will also interact on current problems facing their relevant fields.

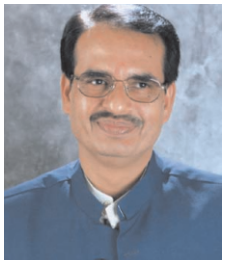
I hope that the outcome of this conference will prove to be beneficial for the young engineers.

I wish the conference and the souvenir all success.

Ram Naresh Yadav

Phone : 0755-4080170,4080180, Fax : 0755-4080172

Shivraj Singh Chauhan
Chief Minister



Government of Madhya Pradesh
BHOPAL- 462004
Sl. No. 424, 27 November 2012

MESSAGE

I am delighted to know that the Jaypee University of Engineering and Technology, Guna is organizing 17th Annual Conference of Gwalior Academy of Mathematical Sciences and National Symposium on Computational Mathematics and Information Technology.

India has privilege of introducing decimal number system. The Indus Valley civilization exhibits rich knowledge of mathematics, Aryabhata, Brahmagupta, Bhaskara-II and many more have contributed to development of mathematical knowledge which forms the foundation of India's computation genius.

I hope the symposium will bring more knowledge to participants. I wish the event a success.

Regards.

Shivraj Singh Chauhan

Digvijaya Singh

64, Lodhi Estate
New Delhi - 110003
Tel. : 011-24628655 (R)
011-23019373 (O)

Dated 1st December, 2012

MESSAGE

I am glad to know that the Jaypee University of Engineering and Technology, Guna is organizing 17th Annual Conference of Gwalior Academy of Mathematical Sciences and National Symposium on Computational Mathematics and Information Technology from 7-9 December, 2012. It is also learnt that they are publishing a souvenir on this occasion. I send my good wishes and blessings for the success of the Conference and Symposium.

DIGVIJAYA SINGH

MANOJ GAUR
Executive Chairman

JAIPRAKASH
ASSOCIATES LIMITED

November 8, 2012

MESSAGE

I am delighted to note that the Jaypee University of Engineering and Technology, Guna is organizing the ***17 th Annual Conference of Gwalior Academy of Mathematical Sciences*** and ***National Symposium on Computational Mathematics and Information Technology*** from December 7 to 9, 2012 at the University campus.

I am sure that the Conference and symposium together will provide a unique platform for academia and researchers for fruitful deliberations and exchange of ideas in the emerging areas of Computational Mathematics and Information Technology. The galaxy of expert present will enormously benefit young researchers attending the Conference from every corner of the country.

I take this opportunity to the organizers of the Conference and extend my best for grand success of the event.

MANOJ GAUR

JAYPEE GROUP

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Regd. Office : Sector - 128, Noida - 201 304, Uttar Pradesh (India)

JAYPEE UNIVERSITY OF ENGINEERING & TECHNOLOGY

(State Private University established by State Legislature of Madhya Pradesh by Act No 23 of 2010)
A. B. ROAD, P. B. No. 1, RAGHOGARH, DIST : GUNA (M.P.) INDIA
Phone : 07544 - 267051, 267310 - 14 Fax : 07544 - 267011
website : www.juet.ac.in

MESSAGE

I am glad to note that the Jaypee University of Engineering and Technology, Guna is organizing the 17th Annual Conference of Gwalior Academy of Mathematical Sciences and National Symposium on Computational Mathematics and Information Technology from December 7 to 9, 2012 at the University campus.

Mathematics is the gateway of all sciences and has become an indispensable tool in solving the problems of Engineering and Technology. The Conference and Symposium will bring like-minded individuals on one platform to discuss new challenges and trends in the areas of Mathematical Sciences and Information Technology. I am sure that the deliberations will enrich academic wisdom of the participants to enable exploration of new domains of applications in mathmatics and IT.

I hope that the delegates will have an enjoyable and fruitful stay in the JUET campus. I wish the Conference a grand success.

DR YAJULU MEDURY
COO (EDUCATION)

JAYPEE UNIVERSITY OF ENGINEERING & TECHNOLOGY

(State Private University established by State Legislature of Madhya Pradesh by Act No 23 of 2010)
A. B. ROAD, P. B. No. 1, RAGHOGARH, DIST : GUNA (M.P.) Pin 473 226
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website : www.juet.ac.in

Prof. N.J. Rao
Vice Chancellor

MESSAGE

I am extremely happy to note that the departments of Mathematics and Computer Science & Engineering are jointly organizing a National Symposium on Computational Mathematics and Information Technology and 17th Annual Conference of Gwalior Academy of Mathematical Sciences during 7-9 December 2012.

Mathematics is the backbone for the development of scientific and technological fields, Information Technology is the thrust area providing basis for all round development of humanity and improvement of its well being. This seminar will provide a forum for interaction of IT specialists, computer scientists and mathematicians to dwell upon the development of a host interdisciplinary subject. Association of GAMS provides strong interaction with the leading mathematicians and helps in conduct of a very useful national symposium. The presence of large number of professionals, Academicians and researchers will be able to generate high level of intellectual deliberations and help to inspire younger scientists and teachers to go the greater heights. I wish the symposium all success.

Prof. N.J. Rao
Vice Chancellor

JAYPEE UNIVERSITY OF ENGINEERING & TECHNOLOGY GUNA

DEAN (R)

Nove 30, 2012

MESSAGE

It is a matter of great pleasure and pride that 17th Annual Conference of Gwalior Academy of Mathematical Sciences and National Symposium on Computational Mathematics & Information Technology are being organized by the departments of Mathematics and CSE, JUET, Guna from December 7-9, 2012. The purpose and vision behind such events is the promotion of academic and research activities in the university as an institution of excellence known by the research published by its faculty and research scholars in the journals of national and international repute.

In the conference our young faculty members and research scholars will get an opportunity to interact with eminent experts in Mathematics and Information Technology. Efforts have been made to invite leading mathematician and computer scientist to deliver plenary and invited lectures. About 250 papers have been received for presentation. I am confident that the deliberation of the conference and symposium will prove a new milestone for the development of research in Mathematical and Engineering Scieces at JUET, Guna.

(D.S. Hooda)
Dean (Research) & Convener of the Conference

Organizing Committee of the Conference

Chief Patron

Sh. Manoj Gaur	Executive Chairman, Jaypee Group

Patron

Dr. Y. Medury	C.O.O. (Education), Jaypee Group

Chairman

Prof. N.J. Rao	VC, JUET

Vice- Chairman

Prof. K. K. Jain	Dean, JUET

Convener

Prof. D.S. Hooda	Dean (Research), JUET

Organizing Secretary

Prof. Shishir Kumar	HOD (CSE), JUET

Local Organizing Committee

Prof. D.S. Hooda	Chair
Prof. I. Hussain	Co-chair
Brig. (Retd.) SKS Negi	Member
Prof. Rajiv Saxena	Member
Prof. J. N. Dubey	Member
Prof. P.K. Singh	Member
Dr. Hari Mahalingam	Member
Dr. Anuj Kumar	Member
Dr. Rajeev Shrivastav	Member
Dr. Sudeep Sharma	Member
Sh. V. C. Pandey	Member
Prof. Shishir Kumar	Convener

JUET GUNA

The Jaypee University of Engineering & Technology has been established under a Memorandum of Understanding (MOU) with the Government of Madhya Pradesh as the first private university in the state.

The University is located in a sprawling 120 acre campus, about 30 km from Guna on NH-3 in western Madhya Pradesh. The area comes under moderate climate zone having mild temperatures round the year. The campus architectural design has been made by Plural Architects Delhi, with construction being undertaken by the Jaypee Group itself. Presently, a total built up area of 1.20 lacs sq. mtrs. has been achieved comprising of the three Academic Blocks, 22 Students Hostels, Multipurpose Hall, 140 Faculty Residences, Annapurna and other support facilities. At present 2240 students (boys and girls) are housed in the campus along with 250 faculty and staff members.

At the undergraduate level 4 Year, 8 Semester B.Tech. Programmes are being offered in Electronics & Communication Engineering, Computer Science & Engineering, Chemical Engineering, Civil Engineering since 2003 and Mechanical Engineering since 2008. From 2006 a three years six semesters Diploma Program in "Building Materials and Cement Technology and from 2010 three year Diploma programe in Thermal Power Plant Engineering" have been offered to cater for the increasing demand for Cement and Power Industry across the country.

The University has well equipped lecture theaters and laboratories with modern audio-visual equipment. IT infrastructure includes about 850 computer systems operating on UNIX/Windows 2000/Linux environment, broadband internet connectivity, projection facilities and video conferencing. It has a Learning Resource Centre stocked with more than 24000 books plus E-journals and a modern library management system. As a modern and hygienic mess, Annapurna, a state of the art facility provides wholesome and nutritious meals to all inmates. Basic amenities including a hospital, café, tuck-shop & multi facility shops, bank, medical centre and laundry in the campus. The serene campus environment and academic pursuits help young minds to grow into well developed and responsible citizens of tomorrow.

Vision

Playing a pivotal role to enable the country in general and the State of Madhya Pradesh in particular in developing high caliber trained manpower in the frontier areas of technologies, to take up challenges of the industry in the fields of infrastructure development, manufacturing innovations, communication, networking and industrial chemical engineering applications.

Mission

- To develop as a benchmark University in emerging technologies.
- To provide state of the art teaching & learning process and R&D environment, and
- To harness human capital for sustainable competitive edge and social relevance.

Some Glimpses of the Glorious Journey of GAMS

The Gwalior academy of Mathematical Sciences (GAMS) was launched in March - 1994 by the researchers and faculty members of Gwalior region with Professor V. P. Saxena as its founder president, in the august presence of Prof. A. H. Siddiqui, A.M.U. Aligarh with the twin objectives of inculcating interest in mathematics amongst the scholars of Gwalior region and promoting teaching and research activities in mathematical sciences. Since then it has been endeavoring towards upliftment of mathematics by publishing news bulletins and research journals and organizing annual conferences, workshops and seminars in interdisciplinary areas.

The first annual conference of academy was held at School of Mathematics and Allied Sciences (SOMAAS), Jiwaji University, Gwalior on September 17th 1995. Prof. H. C. Khare, Ex-President of Indian Mathematical Society, inaugurated the conference. In this conference an award lecture was instituted in the memory of one of the most renowned teachers of mathematics of Gwalior region Professor S. K. D. Gaur and the same was delivered by Prof. G. C. Sharma of Agra University.

The Academy co-sponsored the Fourth International Conference on Physiological Fluid Dynamics, held at Jiwaji University during December 1995 in which more than hundred delegates from all over the world participated. The proceedings of this conference have been published by Narosa, New Delhi, under the title 'Advances in Physiological Fluid Dynamics'. The cultural program held at this occasion reflected rich cultural heritage of the region through a ballet, ‘Mrignayani’.

The second annual conference of the academy was held at Govt. Girls P.G. College Morar (Gwalior) on September 15th, 1996.The conference was inaugurated by Prof. P. K. Jain from Delhi University who also delivered the second S. K. D. Gaur memorial lecture. Eminent scientist Prof. A. P. Yoganathan, Atlanta (U.S.A) and Prof. M. Saleem, Bundelkhand University were other distinguished speakers.

A three week instructional conference on “Mathematical Modeling in Ecology and Medicine" was held at SOMMAS, Jiwaji University, Gwalior from March 28 to April 17, 1997 under the auspices of GAMS and Department of Science &Technology, New Delhi. Prof. H. P. Dixit, Vice-Chancellor, Bhoj Open University, Bhopal inaugurated the conference. Besides local resource persons several distinguished speakers including, Prof. J. B. Shukla; Prof G. C. Sharma, Prof. R. D. Agrawal, Prof. B. Rai, Prof. A. K. Govila, Dr. B. R. Shrivastava, Prof. Manju Pandey and Dr. K. R. Pardasani addressed the conference. The deliberations covered modeling in Ecology, Population Dynamics, Mathematical Epidemiology, Stochastic Modeling, Modeling in Blood Flow, Ophthalmology and Burns and Cold Injuries in Skin and Subcutaneous Tissues, to name a few. The program also included training in Computer Programming through C-language. The valedictory function, held on April 16, 1997 was graced by the auspicious presence of renowned mathematician Prof. J. N. Kapur, as chief guest and Prof. K. K. Tiwari former Vice Chancellor as special guest. Prof. R. R. Das, Vice-Chancellor, Jiwaji University presided over the function.

The third annual conference of academy was held at Govt. Science College, Gwalior on November 14, 1997. In this conference the third S.K.D. Gour memorial lecture was delivered by Prof. B. S. Yadav, Delhi University. Other distinguished lectures were delivered by eminent mathematicians Prof. R. D. Agrawal (Vidisha), Prof. J. B. Shukla (IIT Kanpur), Prof. P. N. Shrivastava (Jhansi) and Prof. K. R. Pardasani (Bhopal).

Apart from this, Gwalior Academy of Mathematical Sciences continued to publish regularly its news bulletin and the research journal of the Academy entitled GAMS Journal of Mathematical Biosciences. About twenty five distinguished scientists from various countries, like USA, UK, Australia, China, Spain, Argentina besides India were invited to join the editorial board of this journal. The first issue of the journal was released at the 8^{th} International Congress of Biomathematics on 27^{th} August 1997 at Panama. The journal encourages the research articles in mathematics as well as in interdisciplinary areas.

The fourth annual conference of academy was held at DRDE, Gwalior on July 31, 1999. In this conference Prof. M. A. Pathan, Aligarh Muslim University delivered fourth S.K.D. Gaur Memorial lecture .The conference was inaugurated by Prof. J. B. Shukla, I.I.T. Kanpur. Another guest of honour in this conference was Dr. K. M. Rao, Associate Director of DRDE, Gwalior. Along with the conference a symposium on "Mathematical Modeling and Computer Applications in High altitude Physiological problems with a Special Reference to Defence" was also organized .The topic of the symposium was centered on the problems faced by our army persons in Kargil.

The fifth Annual conference of the Academy was held at Govt. P. G. College, Guna on May 21, 2000. The conference was inaugurated by Mr. Kailash Narayan Sharma, Guna. Prof. R. R. Das, the then Vice-Chancellor, Jiwaji University presided over the inaugural function. Prof. V. P. Saxena, Gwalior, delivered the fifth S. K. D. Gaur Memorial lecture. The second issue of the GAMS Journal of Mathematical Biosciences was also released during this conference.

The Sixth Annual conference of GAMS was held at the School of Mathematics and Allied Sciences, Jiwaji University, Gwalior on Feb. 25, 2001. This conference was inaugurated by veteran mathematician Prof. J. N. Kapur. Other invited speakers included eminent mathematicians like Prof. J. B. Shukla, Prof. M. A. Pathan and Dr. K. R. Pardasani. Under the auspices of the Academy a Quiz on Mathematics cosponsored by the Rotary club of Gwalior was also organized at various colleges of Jiwaji University for school children, on the occasion of Ramanujan's birthday.

The Seventh Annual Conference of the Academy was held at Maharana Pratap College of Technology, Gwalior on April 25, 2002. The conference was inaugurated by distinguished mathematician Prof. G. C. Sharma, B. R. Ambedkar University, Agra. Prof. R. C. S. Chandel, Prof. Sunderlal and Dr. Rashmi Bhardwaj delivered invited lectures.

The eighth conference was organized at Govt. P.G. College, Datia and was inaugurated by Prof. Bindyachal Rai, Allahabad University who also delivered S.K.D Gaur memorial lecture.

In view of the growing interest of research scholars as well of senior mathematicians, the duration of organization of annual conferences was extended by involving interdisciplinary areas from the ninth annual conference held at ITM Group of Colleges, Sitholi, Gwalior during January 19-20,2004 .This conference was addressed by eminent scientists including Prof. G. Jayaraman, IIT Delhi, Prof. Karmeshu, JNU, Prof. P. K. Suri, Kurukshetra University, Prof. A. R. Rajwade, Punjab University and Prof. V. K. Katiyar, IIT Roorkee.

In the same year, a national workshop was co-sponsored by GAMS along with Ramanujan Mathematical Society. This workshop was on Financial and Biological mathematics. In this workshop Prof. A. H. Siddiqui, Saudi Arabia, Prof. P. Manchanda, Amritsar, Prof. B. Rai, Allahabad, Prof. A. B. Roy, Calcutta, Prof. Phoolan Prasad, IISC Banglore, Prof. Vijay Kumar and Prof. P. Thangraj from Chennai were amongst the invited speakers. A Panel discussion on Financial Mathematics initiated by Prof. Siddiqi was also organized at this occasion. Some delegates from Nepal, USA and Bangladesh also participated in the discussions.

The tenth annual conference was organized by one of the premier women educational institutes of North India, namely Kamla Raja Girls (P.G.) Autonomous College, Gwalior on February 17-18, 2005. The conference was graced by veteran mathematicians Prof. M. K. Singhal and Prof. Asha Rani Singhal. Prof. D.P. Agrawal, UPSC, New Delhi and Prof. J. B. Shukla, IIT. Kanpur also addressed the conference.

In the year 2005, GAMS co-sponsored a three days workshop on Bio-informatics and Biomathematics, held in Jiwaji University, Gwalior in which the hands-on training on computers was also provided.

The eleventh annual conference of Gwalior Academy of Mathematical Sciences along with a National Symposium was organized at Jaypee Institute of Engineering and Technology, Guna, during April 22 - 23, 2006. The conference was inaugurated by Professor M. N. Faruqui, an eminent scientist and former Vice Chancellor of Aligarh Muslim University. Professor P. K. Sharma, Devi Ahilyabai University, Indore delivered S.K. D Gaur memorial lecture. Professor Satya Mishra, USA was the plenary speaker at the conference. Prof. Sunil Datta, Prof. D. S. Hooda, Prof. Renu Jain, Prof. K. R. Pardasani, Dr. Rajiv Saxena and Dr. R. C. Chakraborty delivered invited lectures. The most attractive event of the conference was Kavi Sammelan, which was organized on the advice and blessings of Shri Jaiprakash Gaur ji on 22nd April 2006 to commemorate the occassion. The efforts made by Professor N. J. Rao, Director JIET and Professor D. S. Hooda, Organizing Secretary were commendable.

The twelfth annual conference of Gwalior Academy of Mathematical Sciences was held at MANIT, Bhopal. This conference was inaugurated by eminent scientist Prof. K. K. Tiwari. Prof. G. Jayaraman, Prof. Manju Agrawal delivered invited lectures. During this conference a new milestone was achieved when the website of the Gwalior Academy of Mathematical Sciences was launched. The News Bulletin of GAMS was also released at the conference.

The thirteenth annual conference along with first international conference of GAMS was organized at Anand Engineerig College, Agra. It was inaugurated by Prof. Whiteman from Uxbridge University, U.K. Other distinguished speakers included Prof. Zafar Aslan, Turkey,

Prof. H. T. Low, Singapore, Prof. Lokenath Debnath and Prof. P. N. Tandon. A session of the conference was also held at Y.I.T, Jaipur. Both the places served the tourist interests of the delegates also.

The fourteenth annual conference of the Academy was held at IPS college of Professional Studies, Gwalior. It was addressed by distinguished speakers like Prof. M. A. Pathan, Prof. Bhola Ishwar, Dr. R. Datta and Dr. Gulshan Wadhwa.

The fifteenth annual Conference held at M.E.R.I.T, New Delhi during Dec. 12-14, 2010, was inaugurated by former governor of Madhya Pradesh, Bhai Mahavir. Prof. Hema from Australia, Prof. B. D. Sharma, Prof.Sunil Dutta, Prof. G. Jayaraman, Prof. Manoj Mahajan, Dr. B.D. Gurung, Dr.M. A. Khanday delivered invited lectures. The S.K.D. Gaur memorial lecture was delivered by Prof. R. Jain.

The sixteenth annual and second international conference was organized by S.S. Dempo College of Commerce and Economics, Goa during Sept. 22-25, 2011. It was inaugurated by Mr. Kamath, the Chief Minister of Goa. Prof. Milan Stehlik, Austria, Prof. Michael N. Bleicher, U.S., Dr. Ebrahim Shirani, Prof. P. K. Banerjee, Prof. D. S. Hooda, Dr. D. B. Gurung, Nepal were amongst the invited speakers. The conference made a mark not only by its rich deliberations but also by the extensive sight seeing tours and warm hospitality offered by the organizers.

With the organization of the present conference the Academy is entering its sweet seventeenth year. Since its inception the Academy has grown into a well-known organization which has created a niche for itself. It has more than 150 life members including eminent mathematicians as well as young and aspiring researchers. The present conference is being organized by the Departments of Mathematics and Computer Science Engineering, Jaypee University of Engineering and Technology, Guna. Prof. K. N. Yadav, Vice Chancellor, R. D. University, Jabalpur has consented to be the Chief Guest at the Inaugural function. On behalf of the Academy I thank Prof. N. J. Rao, Vice Chancellor and Prof. D. S. Hooda and his team for their painstaking effort for successful organization of the conference. We sincerely hope that this conference will prove to be another milestone in the journey of the Academy.

Renu Jain
School of Mathematics and Allied Sciences
Jiwaji University, Gwalior

ABSTRACTS OF PLENARY TALKS

PL 01.Long Range Dependence in Broadband Networks: Maximum Tsallis Entropy Framework

Prof. Karmeshu
Dean
School of Computer and Systems Sciences and
School of Computational and Integrative Sciences
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New Delhi, India
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Abstract: The study of effects of long range dependence in network traffic is of great importance in gaining insight into performance characteristics of broadband networks. It is known that traffic in broadband integrated networks is bursty. For example it would be of interest to understand the effect of LRD on packet loss probability in single-finite buffer multiplexer. To address such types of questions a maximum Tsallis entropy framework would be presented. We shall discuss queue length distribution of number of packets when network traffic exhibits long range behavior. Explicit expressions would be obtained for buffer overflow probability exhibiting power law behavior. The analysis would be extended to queuing networks. It would be shown that product form solution is retained when usual product of exponentials is replaced by q-product of exponentials. The application of Tsallis framework to the study of loss systems would also be briefly discussed. A new queuing system would be investigated with random rates and it will be shown to exhibit power law behaviour akin to maximum entropy description based on Tsallis entropy.

PL 02.High Performance Super Computers (HPSC), past,present & future.

Prof (Dr) Rattan K Datta
(President GAMS, former adviser GOI, president CSI, president ICT Section ISCA)

Abstract: Recent trend is that the power & status of a nation is determined by the number & types of supercomputers developed & used. India is fully aware of this aspect, that is why, in late 1980s, during Rajiv's era, decision was taken to develop in house supercomputing facilities with some success. Honorable P.M, Dr Manmohan Singh, on 3rd Jan, 2012 announced allocation of special funds for this purpose. He is again expected to announce special mission during his presidential address on 3rd Jan, 2013. It is thus very appropriate that we discuss this subject in some details.
The history of computing, especially, high performance supercomputing (HPSC), can be broadly divided in three eras termed as past, present & future. The first period refers to the initial development of digital computers from the years 1945 to early 1990s. During this period every new generation computer could be termed as a supercomputer. I remember, when in early 1960s I underwent training on an IBM 1620, we were told that it is a very powerful computer & hungry for solving problems. But within a few years it became an inefficient machine which no researcher wanted to use. This was followed by faster & bigger computers by various vendors, but all faded into oblivion soon. With the advent of P.Cs came an era of different categories of computers for various applications. These were micro, mini, super-mini, mini-super, mainframes & supercomputers. Real thrust on development of HPSC came with the technology of multiprocessing in early 1980s. Main vendors on these were Cray Research Inc, NEC, CDC & Fijutsu . Till early 1990s, the numbers of processors to work together on share memory technology were 2 to 8. The development of HPSC technology till then, we take under the period 'past'.

From late 1990s when the technologists learnt to break Amdahl's law barrier, the use of number of processors has increased exponentially. Besides the normal CPUs, GPUs are also being deployed extensively. The fastest computers with a rating of petaflops now use millions of cores. For example the fastest HPSC today is said to be of IBM "Blue Gene Q" with claimed peak processing power of 20 petaflops. It has 1572854 cores. It is not only very expensive to buy, but it is also very expensive to run. Said to be very energy efficient, it needs over 7MWH of electricity to run, costing crores of rupees per year on electricity expenses alone. Besides all these factors, it is believed that we are reaching the technology limits. This era we refer to be pertaining to 'present'.

From 2013 onward we treat as era of 'future'. This era is expected to continue to explore the innovation in multi processing technology with emphasis on higher sustained performance, energy efficiency & extensive use of green technology. As stated earlier, we are fast approaching technological limit with transistor size decreasing to the size of molecules, thereby creating more theoretical & technological issues. New technology & new paradigm to compute need to be explored.

Quantum computer (QC) is one such promising technology. As we know a digital computer works on bit approach, the QC works on operation of 'Qbit '(Quantum bit). As an illustration, a 3bit digital machine can consider 8 different possibilities, but one at a time. On the other hand a QC with 3 Qbits can work on all the eight possibilities at a time through the effect of superposition. This there by increases the speed by eight times. Thus problems of high time complexity like determining the shortest route by a sales person, where as a digital computer will find the route by looking at all the routes in a sequence, the QC can do it in just one step. The argument can be extended to the game of chess or war gaming. One could quote other examples, but it would suffice to state that QC provides a golden route to the development of HPSCs of significant higher processing power. Thus, where as present is being dominated by massive parallel computing, the future is likely to be the era of development of QC & associated innovative applications.

This article describes in brief the history of the development of HPSC leading to the discussion on the basic philosophy of QC & various related issues. Although a number of applications of QC have been demonstrated in the western world but we believe the technology is still in nascent stage, we have all the potential to develop it in our country. The subject is multidisciplinary & needs hand holding by political as well as industry leaders besides the academicians. It is possible to leap frog & be at the top of the ladder. For that we need to develop well thought of efficient strategy for development & introduction in the main stream of teaching & learning. This aspect will also be projected in this paper.

PL 03.Mixed Boundary Value Problems and Saxena's I-Function

V.P. Saxena
Sagar Institute od Research and Technology- Excellence
Ayodhya Bye-Pass Road, Bhopal (India)
Email: Vinodpsaxena@gmail.com

Abstract: This lecture includes brief introduction of Srinivas Ramanujan and some of his work, particularly related with special functions. This is followed by the modelling of certain mixed boundary value problem in Engineering and Biology with solution in terms of special functions. This includes transformation of problems into sets of dual integral equations involving Bessel's functions as kernel. These integral equations are further generalized to dual integral equations with summation kernels. Further generalization will lead to the evolution of I-Function as solution of certain dual integral equations involving generalized Hypergeometric functions. Solution of one mixed boundary value problem in Pharmaco-kinetics is presented in which transdermal drug delivery system is considered where drug is supplied through the skin with a circular patch.

PL 04.Srinivas Ramnujan – A glimpse of his life and Works

Bhu Dev Sharma
Professor of Mathematics
Jaypee Institute of Information Technology (Deemed University)
Noida – 201307,
Bhudev.sharma@jiit.ac.in, bhudev_sharma@yahoo.com

Abstract: Ramanujan, as a Mathematician and as an individual, is a great inspiration and stands far apart from others. As a mathematician, he has been called 'magical genius,' standing at top of the line with other stalwarts. Mathematicians wonder how those copious results in mathematics occurred to him and how he obtained them.

In this presentation, I propose to present some remarkable events of his short life of 32 years. Also, through 3254 results, many of these quite intriguing, he surprised every one in world of mathematics. His seminal contributions some of which are associated with his name are Landau–Ramanujan constant, Mock theta functions, Ramanujan conjecture, Ramanujan prime, Ramanujan–Soldner constant, Ramanujan theta function, Ramanujan's sum, Rogers–Ramanujan identities, Ramanujan's master theorem. I propose to give a brief glimpses of his work that made him immortal in the world of mathematics.

ABSTRCTS OF INVITED TALKS – COMPUTATIONAL MATHEMATICS

ITM 11.AN OVERVIEW ON CRYPTOGRAPHY

Dr. S.S. Shrivastava
Govt. P.G. College,
Shahdol, Bhopal

Abstract: Cryptography is the art of secret writing. More generally, people think of cryptography as the art of mangling information into apparent unintelligibility in a manner allowing a secret method of unmangling. The basic service provided by cryptography is the ability to send information between participants in a way that prevents others from reading it.

A message in its original form is known as plaintext or cleartext. The mangled information is known as ciphertext. The process for producing ciphertext from plaintext is known as encryption. The reverse of encryption is called decryption.

It is used for authentication and encryption (bank cards, wireless telephone, e-commerce, pay-TV), access control (car lock systems, ski lifts), payment (prepaid telephone cards, e-cash), and may become the fundamental instrument of democracy with the advent of e-voting systems.

ITM 12.Soft Set Approaches for Association Rule Mining in Databases

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Abstract: The massive amount of data is piled up in databases of various commercial and scientific organizations due to business transactions and scientific experiments. This data consists of gold mine of information and knowledge. A number of algorithms are reported in the literature for association rule mining under deterministic conditions. However, the data available in databases consists of various types of uncertainty. Some algorithms are also reported in the literature for handling the uncertainty in data by rough set, fuzzy set and vague set approaches in mining associations from the data. However, soft set has emerged as a parameterization tool which can be used along with fuzzy sets, vague sets and rough sets to handle the imprecise data. Here a soft set approach for mining association rules in databases is developed. The approach is illustrated with the help of suitable examples containing uncertainty which leads to under prediction and over prediction of association rules. The soft set approach is successful in addressing the issue of under and over prediction of the rules.

Itm 13.Mathematics at the frontier of science and technology

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Presentation Summary

Maths is a Myth, static and terrifying. Math has an Image Problem. Mathematicians are smart, but “from another world”. Actually, math lurks behind the curtain of popular subjects: simulation, forecasting, data mining, networks, polling, design, optimization, synthetic

environments. Mathematicians have no monopoly on the practice of math — nearly everyone in science and technology uses it. Math has remained as the Hub of Science. Maths is an Ancient and a Modern Subject. Maths is used in Society and Technology in all walks of life. Math allows description, analysis, and prediction (simulation) of quantitative systems Math exposes structures & patterns of nature, Math leverages wisdom, through abstraction Math gives expression to physical laws: Newton's laws, Maxwell's equations, Schrodinger's equation, Einstein's relativity, etc.

Math provides a lingua franca for scientific people across all cultures and eras. Applied Math is what is playing an important role in classrooms and labs near you? Functional Genomics, Structural proteomics, Finance, Cryptography, Simulation of physical systems (e.g., airplanes, tokomaks, hurricanes), Simulation of discrete systems (e.g., traffic flow, networks, battlefields), Immersive visualization, Functional Genomics, and Financial Mathematics are some of the fields where maths is applied. The biological research is dependent on continuing breakthroughs in basic science and math research. Our current economy is a reflection of past investments in scientific research.

So the Mathematics is Empowering!

ITM 14.Real Time Core Simulation Models for Design and Control of Large PHWRs

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Abstract: The Pressurized Heavy Water Reactors (PHWRs) of size 500 MW(e) and above are known as Large Sized Systems and are having loosely coupled rector characteristics. Such systems are known to sustain flux tilts following minor localized perturbations. Then inherent feed-back mechanisms present in these reactors can lead to power oscillations. This behaviour is further enhanced due to deliberate flux flattening in PHWRs done for maximise power output. If these oscillations are not controlled in time, they may lead to unacceptable power distributions and hence to the hot spots. It is well known fact that the optimum operation of such reactors is not achieved by just controlling the gross power output, but needs the control of the power distribution itself. Therefore these reactors need automatic distributed control systems (zonal control systems) backed by an array of in-core instrumentation (usually based on Self Powered Neutron Detectors (SPNDs)).
Control and safety considerations of the nuclear power plant demand that, the transient response characteristics of the nuclear reactor must be understood thoroughly. But the cost of nuclear power plant and as well as the safety requirements rule out the possibility of trial and error approach in this connection. Therefore the designers had to look for real time modelling to obtain the needed understanding of the system.
In this paper we intend to describe the models which can be used to obtain core power distribution in real time, for online monitoring as well as designing the control system.

ITM 15.A comparative study of behaviour of the logistic map in different orbits

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Abstract: Remarkably benign looking logistic transformations $x_{n+1} = r\, x_n(1 - x_n)$ for choosing x_0 between 0 and 1 and $0 < r \leq 4$ have found a celebrated place in chaos, fractals and discrete dynamics. The logistic map $x_{n+1} = r\, x_n (1 - x_n)$, where x_n lies between zero and one, has been widely studied in Picard orbit. Almost eight years back, Rani et al. studied the logistic map in superior orbit and found that the map is stable for much higher range of r than that of Picard orbit. After that a few other researchers applied other iterative procedures and studied the behaviour of logistic map. The purpose of the paper is to provide a comparative study of behaviour of the logistic map in different orbits.

ITM 16.Advaction Diffusion equation and its application

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Abstract: The process of diffusion is welknown but when it occures with Advaction process than partial differential equation of simelteneous occurrence of these two phenomona Advaction Diffusion process have been obtained and it is discussed that the solution of diffusion equation and Advaction diffusuin equation remain same with different physical meaning.Its application discusses the time taken by drug to reach at heart have been measured by obtaing solution of the problem developed

ITM 17.Application of Fractional and Quantum Calculus Operators in Financial Mathematics

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Abstract: Financial mathematics is the branch of applied mathematics concerned with the financial markets . In financial markets, the basic idea for investors as well as for analysts is to earn the profit by mitigating the risk as much as possible. For doing the same mathematicians have given various models for pricing of derivatives with the help of mathematical tools like fractional and quantum calculus and financial concepts like Brownian motion. The Black Scholes pricing model is based on standard geometric Brownian motion. The log returns of this model are not necessarily Gaussian. By introducing the concept of geometric fractional Brownian motion the log returns can be modeled more realistically.
The q-derivatives are part of so called quantum calculus. In this endeavour we also investigate how such derivatives can possibly be used in Itô's lemma which is crucial in forming Black Scholes pricing model.

ITM 18.A new iterative procedure for solving equations in numerical praxis

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Abstract: In nonlinear analysis, Picard, Mann and the Ishikawa iterative procedures are the main tools for solving fixed-point equations by iterative procedures. A new iterative procedure, essentially due to Jungck 1976 is also emerging for solving equations in numerical praxis. The purpose of this paper is to offer a comparison of these iterative procedures by examples.

ITM 19.Analysis of an Integrated H/W and S/W System Using Some Effective Reliability Improvement Techniques

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Abstract: Now a day's integrated h/w and s/w systems are of growing important because of their wide use in many areas including automobiles, aircraft, home appliances, reservation of tickets as well as in most of the clerical works. In these systems, h/w and s/w works together to complete various tasks in a given period of time with full efficiency. When the requirements and dependencies on such systems increase, the possibility of their failures also increases. The impact of these failures may be costly and dangerous to the society. It is, therefore, of great importance to handle such systems carefully with high reliability. The reliability and performance of operating systems can be improved up to a considerable level by the technique of redundancy. However, this technique has not been used much more in case of integrated h/w and s/w systems. And, most of the research work has been carried out either considering h/w components or s/w components alone. Friedman and Tran (1992) tried to develop a combined reliability model for the whole system in which hardware and software components work together. But the method of redundancy was not used in this paper. First time, Malik and Anand [2010,11] developed reliability models for an integrated h/w and s/w computer system using the technique of redundancy.

It is proved that preventive maintenance can slow the deterioration process of an operating system and restore the system in a younger age or state. Thus, the method of preventive maintenance can be used to improve the reliability and profit of system. Malik and Nandal [2010] discussed a redundant system under preventive maintenance after a maximum operation time. Also, sometimes, it becomes necessary to give priority in repair to one unit (or component) under repair activities of other unit (or component) not only to reduce the down time but also to minimize the operating cost. Malik and Sureria [2012] studied probabilistically a computer system with priority to h/w repair over s/w replacement. Furthermore, reliability and availability of a system can be increased by making replacement of the failed component by new one in case repair time is too long. Recently, Malik and Kumar [2011, 2012] investigated reliability models for a computer system with preventive maintenance and repair subject to maximum operation and repair times.

In view of the above and practical situations in mind, in the present talk an integrated h/w and s/w system is analyzed stochastically in detail using some effective reliability improvement methods such as technique of redundancy, preventive maintenance, replacement of the defective components and priority in repair activities. A reliability model is developed by taking two identical units of the integrated system in which one unit is initially operative and the other unit is taken as spare in cold standby. In each unit

h/w and s/w fails independently from normal mode There is a single server who visits the system immediately to conduct preventive maintenance of the unit after a maximum operation time as well as to do h/w repair and s/w replacement. If server unable to repair the h/w in a pre-specific time (called maximum repair time), the h/w is replaced by new one giving some replacement time. However, only replacement of the s/w is made by new one giving some giving some replacement time if s/w fails to execute the desired function properly. Priority to h/w repair is given over s/w replacement. The failure time of h/wand s/w follows negative exponential distributions while the distributions of preventive maintenance, repair and replacement times are taken as arbitrary with different probability density functions. All random variables are statistically independent and uncorrelated to each other. The repairs and switch devices are perfect. The expressions for various reliability measures such as mean time to system failure, availability , busy period of the server due to preventive maintenance, busy period of the server due to repair, busy period of the server due to hardware replacement , busy period of the server due to software replacement, expected number of software replacements, expected number of hardware replacements and expected number of visits of the server are derived by using semi-Markov process and regenerative point technique. The graphical study of mean time to system failure and profit function has been made giving particular values to various parameters and costs. The computer system can be cited as one of the best example of the present study.

ABSTRCTS OF INVITED TALKS - INFORMATION TECHNOLOGY

ITC 11.Dimension Reduction and Text Mining

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Abstract: In text mining, each term represents a dimension. However, a major portion of documents is usually covered with irrelevant, noisy, and redundant terms. Such terms (dimensions) unnecessarily increase the computational complexity as well as adversely affect the efficacy of the underlying classification/clustering algorithm. Therefore, it is required to remove such unnecessary dimensions from the dataset. The dimension reduction methods are usually classified as feature extraction methods, feature selection methods and hybrid methods, which combine features of both feature extraction and feature selection. Various studies by researchers show that feature selection methods are most suited to the text mining applications. Latter, researchers studied two-stage dimension reduction methods and found that they perform better than the single stage dimension reduction methods. A lot of researchers are working on the use nature-inspired computational methods for dimension reduction. However, these methods have been sued as hybrids with conventional feature selection/extraction methods. Here, we discuss various methods used to reduce dimensions in the feature space for text mining.

ITC 12.Web Application Vulnerabilities in context of Code Injection Attacks

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Abstract: Now days in typical web environment, there is a large spectrum of application that is susceptible to code injection attacks. Code injection attack is perpetrated by the suspicious user through entering vulnerable code into the web form or address bar of web browser. Web application vulnerabilities may be easily exploited by attacker through injecting tricky SQL string, un-trusted java script code into available web form. Some well known sites such as Twitter, Facebook, MySpace, Orkut, etc have been subjected to code injection attacks in recent years. The reason of code injection attack is due to poorly written web application code that increases the vulnerability of web-application code. A suspicious user may launch code injection attack to extract session cookie values, gather unauthorized data from database or redirect the user to another web site.

ITC 13.G2C Strategies of e-governance

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Abstract: ICT has tremendous applications in G2C form of e-governance. The government can improve its efficiency, accountability and transparency by using ICT. In the increasingly growing complexities of

public administration, the use of IT has become indispensable for effective governance and e-Governance is an emerging trend which can re-invent the way the Government works. But in India, the experience has shown that the success of initiatives depends on the political will and commitment of bureaucracy.
ICT brings in lots of benefits in the area of e-Governance – e.g. enhanced transparency, online services, civil society participation, e-trade facilitation, empowerment of marginalized groups, savings of public resources, strengthening the principles of democratic governance through enhanced interactivity and engagement with citizen and civil society.
e-Governance allows citizens to communicate with the government, participate in government's policy making and citizens to communicate with each other. The e-Governance truly allows citizens to participate in the government decision-making process, reflect their true needs and welfare by utilizing e-Governance as a tool.
The term Governance may be understood as the process by which society steers itself. This includes the interactions among the State, the private enterprise and the civil society. With the advent of Internet and networking and communication technologies, the whole process of governance has become ICT driven. Different National and State governments are utilizing ICT to provide services to the citizens at their door steps and bringing down the cost of governance and increasing efficiency and effectiveness of delivery.e-Governance is the use of information and communication technologies to support good governance. It includes: e-Administration, e-Citizens & e-Services and e-Society. But are these efforts sufficient? Do they actually impact the man on the street? This paper is based on a research project to evaluate the existing framework of G2C solutions deployed in the state of Uttarakhand, a semi-hill state of India, and based on findings, proposes a revised model of G2C.

ITC 14.Artificial Neural Networks and their Engineering Applications

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Abstract: Artificial neural networks are an attempt to imitate the learning activities of the brain. The human brain is composed of approximately 1011 neurons (nerve cells) of different types. In a typical neuron we can find the nucleus which is where the connections with other neurons are made through a network of fibers called dendrites. Extending out from the nucleus is the axon which transmits , by means of a complex chemical process, electric potentials to the neurons with which the axon is connected to. When the signals which the neuron receives equal or surpass their threshold, it “triggers”, sending the axon an electric signal of constant level and duration. In this way the message is transferred from one neuron to the other. Because of its inherent properties, Artificial Neural network offers intelligent methodology for analysis and design of engineering problems. Application of ANN along with Finite Element simulation can give such a “intelligent” data base which can be readily available for instant use and evades dependencies on expensive FE package. A simple “put the value and get the estimate” approach using ANN will make the designer’s first hand job extremely simple. In this talk, various engineering applications of ANN are demonstrated.

ITC 15.An Artificial Neural-Network-Based Approach to Apple Quality Detection

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Abstract-The purpose of this paper is to examine the apple quality estimation using Artificial Neural Network (ANN). Testing effort has been calculated using ANN method. Independent variables are the surface level quality parameter. The dependent variable is the quality of the apple. The final result of ANN model for apple quality estimation is discussed, however the modeling results showed that there is excellent agreement between the experimental data and predicted values with a high determination coefficient, with very good performance, fewer parameters, shorter calculation time and lower prediction error. The ANN model is developed in MATLAB. A low level of error prediction confirmed the fact that the neural network models are an effective instrument of the apple quality estimation. The model might be an alternative method for quality assessment of apple and provide consumers with a safer food supply.

ITC 16.The role of Data Mining in Software Engineering

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Abstract-Ever since the software industry flourished, the importance of getting an improved and quality product started to grow. This has resulted in stiff competition in the Software field for developing an efficient software engineering domain in the company to come with an process which always result in the developing whole process of software development Life cycle(SDLC). The very aspect of the whole Software development life cycle is thoroughly re-visited to ensure that each and every step is performed to highest accuracy. In modern day scenario, the companies are becoming domain specific and it results in having earlier experience of the firm to developed such software. This available database of the earlierSDLC can be better utilized for improvement in the upcoming project. Data Mining is helping the industry to come with latest tools and techniques to find the patterns in the existing database of the organizations, helps in find association between various entities of the earlier development and of the domains and also helps in classify the requirement on more predetermined basis of available data. The data available can also be clustered/grouped to find the similarity in the existing completed projects and new one.

ITC 17.Utilizing the power of cloud computing to offer e-Governance Services

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Abstract The increasing use of cloud computing has forced the governments to assess or offer e-Governance service using this new delivery model. With the governments of major countries, especially the United States, encouraging cloud adoption, governments of Asia Pacific countries too are gaining confidence and increasingly evaluating cloud computing. The power of proposition of moving to the cloud is too attractive for the governments to ignore. The e-Governance services like e-passport or e-learning can be offered easily through fully customized Service oriented Clouds. The use of SaaS model of cloud computing might provide the opportunity to lower cost, but also to deliver software applications to end-users over the web, providing a much more flexible experience in terms of time and location of access. In cloud computing SaaS is a software delivery model in which services are installed, assembled and maintained on the systems of the SaaS provider and used by others over the Internet. The user pays a certain fee for the use of the software or for a certain period that the software is used. The latter case is like a subscription that can easily be terminated as no large investments need to be made. The Cloud has potential to transform not only business ecosystem but also day to day challenges of Indian citizens including necessary government services such as healthcare and education. Currently, India lags behind developed countries in terms of established data centers operating in the country. Economic benefits of having data management centers in the country are huge and the Cloud Policy will have to provide a clear vision to enable such an outcome. The Cloud unlike previous technology shifts is not a mere collection of technologies but a transformational concept which requires the ecosystem to be developed.

ITC 18.Intellectual Property Rights and Cyber Laws

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Abstract As Protecting Intellectual Property Rights (IPRs) like Patents Trade Marks, Copyrights, Designs etc. has gained significant place in day to day competitive industrial & research scenario. These rights have attained crucial significance as India is a member of World Trade Organization (WTO) and Signatory to WTO agreement on IPRs i.e. Agreement on Trade -Related Aspects of Intellectual Property Rights (TRIPs), 1994. w.e.f. 1 January 2005, Indian IPR laws are TRIPs compliance and we have product patent regime in all field and Science & Technology. India is member of Berne convention on Copyright and we recognize international copyright.

India do provide national treatment to foreign nationals when they file their IPRs in India to comply WTO guidelines. The understand and knowledge of IPRs Emerging Engineers and Managers has become imperative to protect Intellectual Assets of company like Patents, Trade Marks, Designs, Proprietary Information etc. and to avoid unintentional infringement of others IP as well as to prevent others from misusing our IP.

Further, Indian being the member of United Nations Commission on International Trade Law has enacted Information Technology Act, 2000 with some major amendments in 2008 to legalize digital documents, electronic transaction, introducing the concept of Electronic Signature and defined various cyber crimes like hacking, impersonation, data theft and misuse etc. The objective of this seminar is to equip and Sensitize Faculty and students about IPRs - its basic, variants, latest issues after WTO agreement in 1995 and to sensitizes them to use IPR as a tool to protect their IP in the light of Product Patent availability. Likewise understanding of Cyber Law related legislation will help engineers and managers to adopt computer and internet security measures to avoid data theft and follow security standards as a part of security audit compliance.

ITC 19.Software Quality Management

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Abstract - Quality is one of the key differentiators today. Even in a price sensitive country like India, a customer expects value for money, where the value is the set of stated or implied expectations that a customer has in terms of Quality of product or Service. And it is the responsibility of the vendor to build this quality.
Software Quality Management (SQM) is all the activities that the vendor does to ensure that the product has all the features that it claims to possess, it does what it is supposed to do, and while in use, the product is reliable. Though there are several Quality Assurance models, these are all based on 8 Quality Principles. These principles would be covered during the lecture. The lecture would also cover- Software Quality Issues, Product vs. Process Quality (QA vs. QC), Quality Models (ISO 9001 / CMMI / Six Sigma / TQM), Quality Principles,Process Approach to Quality.

ITC 20.Migration to next generation Internet Protocol

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Abstract - Internet Protocol provides host-to-host communication between computers on the Internet. It has made possible handling of heterogeneous networks in the Internet. The American Registry for internet numbers (ARIN(reported that all of the IPV4 class A address has been assigned,85% of the class B addresses had been assigned and 85% of class C addresses had been assigned.
Therefore it is expected by 2018 addresses would become exhausted. The number of host connected the internet roughly doubles every year and the IP address space can not cope with this increase. The phenomenal growth of the Internet and its scope of applications during last decade brought out deficiencies in IPV4 design. There are some points need to be addressed. Considering these drawbacks the Internet Protocol version 6 also called Internet Protocol Next Generation IPng was developed.
The main improvement brought by IPv6 (Internet Protocol version 6) is the increase in the number of addresses available for networked devices, allowing, for example, each cell phone and mobile electronic device to have its own address. IPv4 supports 232 (about 4.3 billion) addresses, which is inadequate for giving even one address to every living person, much less for supporting the burgeoning market for connective devices.
IPv6, however, supports 2128 addresses; this is approximately 5×1028 addresses for each of the roughly 6.5 billion people alive today.
IPv6 offers many technical advantages such as the simplified deployment of IP security, standard routing, and the plug & play capability. However, according to the IPv6 indicator in the Digital Agenda Scoreboard, less than 3% of all websites are IPv6-compatible.

ABSTRACTS OF CONTRIBUTED PAPERS - COMPUTATIONAL MATHEMATICS

CPM111. Economic Analysis of a Computer System with S/W Replacement and Priority to H/W Repair over H/W Replacement Subject to Maximum Operation and Repair Times

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The main objective of this paper is to make economic analysis of a computer system of two identical units- one is operative and other is kept as cold standby. In each unit h/w and s/w fails independently directly from normal mode. There is a single server who visits the system immediately to conduct preventive maintenance, repair and replacement of the components. The preventive maintenance of the system is carried out after a maximum operation time. If repair of the h/w is not possible by the server up to a pre-specific time (called Maximum Repair Time), it is replaced by new one with some replacement time. However, only replacement of the software by new one is made whenever s/w fails to meet out the desired function properly. Priority to h/w repair is given only over h/w replacement. The failure time h/w and s/w follow negative exponential distribution while the distributions of preventive maintenance, repair and replacement time are taken as arbitrary with different probability density functions. Graphs are drawn for a particular case to show the behaviour of MTSF, availability and profit function with preventive maintenance rate and fixed values of other parameters.

CPM112. Some Remarks on Product Summability of Sequences

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ABSTRACT: In [4], the definition of product summability method (D,k)(C,l) for functions was given and some of its properties were investigated . In [2], $(D,k)(C,\alpha,\beta)$ $(k>0,\alpha>0,\beta>-1)$ summability for functions are defined and some of its properties are investigated. In this paper $(D,k)(C,\alpha,\beta)$ $(k>0,\alpha>0,\beta>-1)$ summability for sequences are defined and some of its properties investigated .

CPM113. Interval-valued Intuitionistic Fuzzy Assignment Problem under Similarity Measure and Score Function

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In Classical Assignment Problem (AP), c_{ij} denote the cost for assigning the j^{th} job to the i^{th} person which is deterministic in general. In case of some uncertain situation, instead of exact values of the costs, we evaluate the preferences for assigning the j^{th} job to the i^{th} person in the form of composite relative degree (d_{ij}) of similarity to the ideal solution. We can replace c_{ij} by d_{ij} in the classical AP in the maximization form and can solve it by any standard procedure to get the optimal assignment. In the present communication, mathematical formulation of the interval-valued intuitionistic fuzzy Assignment Problem has been presented where the cost c_{ij} has been considered to be interval-valued intuitionistic fuzzy number (IVIFN) which explains the positive and the negative evidence for the membership of an element in a set. Such consideration gives more realistic description than using the crisp, fuzzy or intuitionistic fuzzy sets concept. The similarity measure of interval – valued intuitionistic fuzzy sets have been used in this paper for determining the composite relative degree of similarity. The notion of score function has also been used for validating the solution obtained by the composite relative similarity degree method. Further, few numerical examples show the effectiveness of the proposed method for handling the interval-valued intuitionistic fuzzy Assignment Problem (IVIFP).

CPM114. RELATIONSHIP BETWEEN q-WEYL OPERATOR AND q-LAPLACE TRANSFORM

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The fractional q-calculus is the q-extension of the ordinary fractional calculus. The subject deals with the investigations of q-integral and q-derivatives of arbitrary order and has gained importance due its various applications in the areas like ordinary fractional calculus , solution of the q-differential and q-integral equations , q-transform analysis etc. In the present paper, the authors established a formula exhibiting a relationship between basic analogue of q-weyl operator and q-laplace transform, which allows the straight forward derivation of some useful results involving weyl operator and basic analogue of i-function in terms of q-gamma function. Also some special cases has been discussed at the end of paper.

CPM115.Mathematical model for Hazardous Waste disposal for Uttar Pradesh

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Several environmental problems can be modeled using the graphing, curve-fitting, and programming technology of graphing calculators. These problems reflect real world environmental concerns and social issues that help motivate our interest in mathematical modeling. Hazardous waste generated from the industries through processes, pollution control activities reject etc. are major cause of concern. Hazardous waste if not disposed properly will be harmful for mankind flora and fauna. Their effective identification, quantification and prediction is necessary for designing, and constructing effective treatment, storage and disposal facilities. Models for the hazardous waste disposal and the world's consumption of natural resources are illustrated in the present paper using technology available in the current versions of today's mathematically powerful calculators. I have tried to give a glimpse of natural resources consumption pattern as well as prediction of hazardous waste in 2025 in Uttar Pradesh along with its possible solution.

CPM116. Cost-Benefit Analysis of a Two-Unit Cold Standby Redundant System with Preventive Maintenance Subject to Degradation

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In this paper, reliability model of two identical units has been probed stochastically considering the concepts of degradation, preventive maintenance, inspection and priority. The unit does not work as new after repair and so called a degraded unit. There is a single server who attends the system immediately whenever needed. The server inspects the degraded unit at its failure to see the feasibility of repair. If repair of the degraded unit is not feasible, it is replaced by the new unit. Preventive maintenance is provided to the system when both the units are degraded. The priority for both operation and repair to the new unit is given over the degraded unit. The distribution of failure, preventive maintenance, inspection and repair times are arbitrary with different probability density functions. By adopting semi-Markov process and regenerative point technique, the results for some measures of system effectiveness are obtained in steady state. The numerical results for a particular case are also obtained to depict the behavior of Mean Time to System Failure (MTSF), availability and profit of the system graphically.

CPM117.Analysis of a Computer System with Arrival Time of the Server and Priority to H/W Repair over S/W Replacement

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The purpose of this paper is to analyse a computer system considering the concepts of redundancy, priority in repair disciplines and arrival time of the server. Two identical units of a computer system are taken up in which one unit is initially operative and the other is kept as spare in cold standby. In each unit h/w and s/w work together and fails independently from normal mode. There is a single server who takes some time to arrive at the system for doing repair and replacement of the components. Server repairs the unit at its h/w failure while replacement of the s/w is made by new one by giving some replacement time in case s/w fails to execute the programmes properly. Priority to the h/w repair is given over the s/w replacement. All random variables are uncorrelated to each other. Repair and switch devices are perfect. The time to failure of the unit due to h/w and s/w is exponentially distributed while the distributions of repair, replacement and arrival times of the server are taken as arbitrary with different probability density functions (pdf). Some reliability characteristics of the system model are derived in steady state using semi-Markov process and regenerative point technique. The numerical results for (MTSF), availability and profit are obtained considering a particular case to know their behaviour with respect to different parameters.

CPM118.Three Dimensional Steady State Temperature Distribution in Dermal Regions of Irregular Tapered Cylindrical Shaped Human Limbs

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In this paper an attempt has been made to develop a finite element model to study temperature distribution in dermal region of human limbs of realistic geometrical shape for a three dimensional steady state case. Earlier researchers had developed some models considering a human limb as a regular circular or elliptic tapered cylinder. But in reality limb is not of regular tapered cylindrical shape and the eccentricity is also not same throughout the limb. In view of the above irregular tapered and elliptical shaped limb has been modelled. The mathematical model incorporates the effect of blood mass flow rate, metabolic activity and thermal conductivity. The outer surface is exposed to the environment and appropriate boundary conditions have been framed. The temperature profiles have been obtained in dermal layers of human limb under different environmental conditions and used to study the effect of shape, microstructure and biophysical parameters on temperature distribution in human limbs.

CPM119.SHOCK-PROPAGATION DOWN A NON-UNIFORM TUBE IN NON-IDEAL GAS

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In present paper an attempt is made to study the one dimensional formulation of flow in a tube of varying cross-sectional area for non-ideal gas. Using Whitham rule of characteristic a relation between cross sectional area and Mach number is obtained and result is discussed for different values of internal volume of the gas molecules.

CPM120.THERMODYNAMIC ANALYSIS OF NEWTONIAN AND LAMINAR FLOW ALONG AN INCLINED HEATED PLATE WITH EFFECTS OF HYDROMAGNETIC AND POROUS MEDIA IN TWO REGIONS"

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The purpose of this work is to thermodynamic analysis of Newtonian and laminar flow along an inclined heated plate with effects of hydromagnetic and porous media in two regions. The upper surface of the liquid film is considered free and adiabatic. The effect of heat generation by viscous dissipation is included in the analysis. The influence of the viscous dissipation on velocity, temperature and entropy generation is examined.
Keywords: Inclined plate, liquid film, Thermodynamic analysis, viscous dissipation

CPM121. TWO WAREHOUSE INVENTORY MODEL FOR ETERIORATING ITEMS WITH LINEAR TREND IN DEMAND, TIME VARYING HOLDING COST UNDER PERMISIBBLE DELAY IN PAYMENTS

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A two-warehouse inventory model with linear trend in demand under the condition of permissible delay in payment is considered. A rented warehouse (RW) is used to store the excess units over the capacity of the own warehouse (OW). The stock is being transferred from rented warehouse to own warehouse in a continuous release pattern. Here it is assumed that holding cost is time dependent. Numerical example is taken to support the model. Sensitivity analysis is also carried out for parameters.

CPM122.EOQ MODEL FOR WEIBULL DETERIORATING ITEMS WITH IMPERFECT QUALITY, SHORTAGES AND TIME VARYING HOLDING COST UNDER PERMISSABLE DELAY IN PAYMENTS

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Many times it happens that units produced or ordered are not of 100% good quality. A deterministic inventory model with imperfect quality is developed when the deterioration rate is Weibull distribution. Here it is assumed that holding cost is time dependent. In this study, model has been framed to study the items whose deterioration rate increase with time under permissible delay in payments with imperfect quality. Numerical example is taken to support the model.

CPM123.I- FUNCTION SOLUTION OF A PROBLEM CONCERNING HEAT CONDUCTION IN AN ORTHOTROPICPARALLELOPIPED SHAPED SOLID WITH PRESCRIBED INITIAL TEMPERATURE DISTRIBUTION

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In this paper application of I-function and Jacobi transform of three variables has been illustrated by solving a partial differential equation of Mathematical Physics governing heat conduction for three dimensional flow in an orthotropic rectangular parallelopiped. The temperature conductivity of the material is directional based and varies parabolically in respect of distance. To solve the model Jacobi transform of three variables has been introduced alongwith its inversion formula. The Jacobi polynomials have been used as kernels. The solution provides temperature distribution at every point of the solution in terms of the coordinates and time.

CPM124. GENERALISED SEPARABLE SOLUTION OF DOUBLE PHASE FLOW THROUGH HOMOGENEOUS POROUS MEDIUM IN VERTICAL DOWNWARD DIRECTION DUE TO DIFFERENCE IN VISCOSITY

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In this paper the instability (fingering) phenomenon in double phase immiscible (oil and water) flow through homogeneous porous medium with mean capillary pressure in vertical downward direction is discussed. The mathematical formulation of this problem yields a non linear partial differential equation and the generalised separable solution is given in the exponential form. The numerical solution and graphical presentation is given using MAT LAB coding.

CPM125.NUMERICAL STUDY OF AIR POLLUTION IN ANNULAR REGIONS WITH A POINT SOURCE LIKE CHIMNEY

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There exists a variety of Mathematical and numerical solution of the atmospheric diffusion equation that assumes only first order chemistry on very slow reaction. In the present paper the diffusion of pollutants has been coupled with homogenous chemical reaction. The region of study is the industrial area with point source like stacks with an organized monitoring aroung it. Furthermore, then entire domain is sub-divided into annular regions each one with different topography implying the variation in local parameters. The region is supposed to have uniformity in atleast one direction so as to provide an analytic solution in that direction. In each partitioned annular region which is bounded by concentric circles, uniform variations of physical quantities along the radial direction are assumed. Here we solve the governing equation by Pseudo-Analytic Finite Partition Method to obtain pollution distribution in surrounding areas.

CPM126. Finite element solution of vertical and radial concentration distribution of pollutants in an atmosphere with cylindrical symmetry

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In several cases of air pollution the region of dispersion is radial and vertical. This occurs mostly when the pollutants emerge from large circular areas like chimney of a factory. In this paper pollutant distribution in an atmospheric region with cylindrical symmetry is considered. The problem region is partitioned as per the properties of each part, then Ritz method is applied with respect to only those coordinates which vary the parameters of the problem in that particular sector. The suitable analytical methods can be applied to solve the problem for other independent space variables in each partition. In this paper by using this approach we develop a mathematical model for the problems of circular regions which can be further extended for the problems defined on regular curvilinear zones with less numerical exercise.

CPM127. TEMPERATURE DISTRIBUTION IN HUMAN CUTANEOUS TISSUE REGION WITH COLD INJURY

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In this paper we have constructed a mathematical model of temperature distribution in human cutaneous tissue in cold condition of the atmosphere. The variations in cold atmospheric temperature cause many problems. In this model the rate of blood mass flow and rate of metabolic heat generation are assumed to be constant in epidermis and subcutaneous tissues but linear variable in dermis. The model is transformed in the variational form and solved using Finite Element Method. This will help in estimation the cold injury, if any.

CPM128. A New Quantitative Qualitative Measure of Relative Information for Discrete Probability Distributions and Its Properties

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In order to integrate the quantitative, objective and probabilistic concept of information with the qualitative, subjective and non – stochastic concept of utility, researchers over the past years have proposed several weighted information measures. These measures find applications in fields dealing with random events where it is necessary to take into account both the probabilities with which these events occur and some qualitative characteristic of these events. Taneja and Tuteja [5] characterized and studied a quantitative – qualitative measure of relative information that the utility information scheme (P, U) provides about the utility information scheme (Q, U) given by

$$I(P/Q) = \sum_{i=1}^{n} u_i p_i \log_2 \frac{p_i}{q_i}$$

P and Q being complete probability distributions and U being a utility distribution.
However various authors [1, 2, 3, 4] have shown that the above measure can be both negative and positive and can even vanish when P is not necessarily equal to Q. The object of this paper is to characterize a new quantitative – qualitative measure of relative information which do not suffer from the weakness mentioned above. Without essential loss of insight we have restricted ourselves to discrete probability distributions.

CPM129. Mathematical Modeling of Periodic Drug Supply in Transdermal Drug Delivery in Human Subjects

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Abstract: In this paper, mathematical model for transdermal therapeutic system has been designed to study controlled continuous delivery of drugs via skin to the systemic circulation. We discuss here a drug diffusion model for periodic drug supply in human dermal parts using FEM (Finite Element Method).This method has been used to investigate the drug distribution in human dermal layers. Also we consider tissue absorption rate of drug is decreasing function of drug concentration in each layer. MATLAB programming has been employed for numerical calculation. Graphs have been plotted between drug concentration and other parameters.

CPM130.UPPER AND LOWER BOUNDS OF NEW INFORMATION DIVERGENCE MEASURE IN TERMS OF CHI-SQUARE DIVERGENCE MEASURE

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There are many information and divergence measures exists in the literature of information theory and statistics. These are very useful and play an important role in many areas like as sensor networks, testing the order in a Markov chain, risk for binary experiments, region segmentation and estimation etc. Let $\Gamma_n = \left\{ P = (p_1, p_2, ...p_n) \middle| p_i \geq 0, \sum_{i=1}^{n} p_i = 1 \right\}, n \geq 2$ be the set of all complete finite discrete probability distributions then Csiszar's introduced a generalized measure of information using f-divergence measure is given by $I_f(P,Q) = \sum_{i=1}^{n} q_i f\left(\frac{p_i}{q_i}\right)$, where $f : \mathbf{R}_+ \to \mathbf{R}_+$ is a convex function and $P, Q \in \Gamma_n$. In this paper, we shall consider a new information divergence measure. An upper and lower bounds of new

information divergence measure in terms of the Chi-square divergence measure are also considered in this pap

CPM131. POLYNOMIAL BASED SOLUTION OF FINITE WILD LIFE POPULATION WITH DIFFERENT AGE GROUPS

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Abstract: This paper considered protected wild life population confined to a fixed area. A model has been constructed in the form of Finite Difference Equations incorporating variable birth and death rates with migration. Separate equations have been obtained for different age groups, which are solved by induction method. The results are derived in the form of polynomials of two variables.

CPM132.ON WEYL FRACTIONAL DERIVATIVES OF THE PRODUCT OF HYPERGEOMETRIC FUNCTION AND I-FUNCTION

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In this paper we have evaluated certain Weyl fractional derivatives of the product of generalized hypergeometric function , exponential function and the I-function *of one variable the result obtained have provide the generalization of various known results of Saha and Arora* [2011].
Mathematics Subject classification : 26*A*23.
Key Wards : Weyl fractional derivatives , I-function, Hypergeometric function.

CPM133.FEM BASED STUDY OF TEMPERATURE REGULATION IN OUTER HUMAN BODY WITH MALIGNANCY

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A mathematical study of temperature distribution in dermal part of human body with malignant tumor has been carried out. The region under study is divided into five layers in which epidermis and subcutaneous tissues parts contain one layer each and dermis region is divided into three layers where tumor exists. It is assumed that outer layer of skin is exposed to the atmosphere and has heat loosed and gain accordingly. The study incorporates effect of blood mass flow rate and metabolic heat generation. The normal and

benign tissues are assumed to have normal rates of blood mass flow and self controlled metabolic heat generation. The malignant portion incorporates increased rates of blood mass flow and uncontrolled metabolic heat generation.

CPM134.Solution of Generalized Fractional Reaction-Diffusion Equation involving Saigo Maeda operators

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ABSTRACT

The paper deals with investigation of some closed form solution of generalized fractional reaction-diffusion equation involving Saigo-Maeda operator. The solution of proposed problems are developed in a compact form in terms of Saxena's I- function by the application of Mellin and Fourier transform.

CPM135.TRIPAL DIRICHLET AVERAGE OF MODIFIED M-FUNCTION AND FRACTIONAL DERIVATIVE

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ABSTRACT:

The object of the present paper is to establish a relation of Tripal Dirichlet Average Of Modified M-Function and Fractional Derivative Keywords: Tripal Dirichlet average, Fractional Derivative.

CPM136 . REPRESENTATIONS OF DIRICHLET AVERAGES OF GENERALIZED M-SERIES VIA RIEMANN-LIOUVILLE FRACTIONAL INTEGRALS AND SPECIAL FUNCTIONS

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The paper is devoted to the investigation of Dirichlet averages of the Generalized M-Series. Representation for such constructions in terms of the Riemann-Liouville fractional integrals and of the hyper-geometric functions of many variables are established in two- and multi-dimensional cases. Special cases when the above Dirichlet averages coincide with the Generalized M-Series and hypergeometric functions.

CPM137.SOME COMMON FIXED POINT THEOREM FOR CONE METRIC SPACE IN INTEGRAL TYPE

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ABSTRACT
In this paper, we proof some fixed point and common fixed point theorems for Cone metric space in integral type mappings which shows that our main theorem is generalized version of some known theorems .

CPM138.Generalized fixed point theorems for compatible Mapping in fuzzy 2-metric space for integral type mapping

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ABSTRACT
In this paper, we give some new definitions of compatible mappings of types (I) and (II) in fuzzy-2 metric space prove some common fixed point theorems for four mappings under the condition of compatible mappings of types (I) and (II) in complete fuzzy-2 metric space. Our results extend, generalize and improve the corresponding results given by many authors.

CPM139.Voice Recognition and Body Expressions of Human By Mathematical Model

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Change in technology is growing up day by day and because of that our daily life become effortless in the present time. Due to such technological variation today technology based securities system needed. And this security system must be growing and updating simultaneously with technology. This growth in electronic transactions results in a raise of demand for fast and accurate user identification and authentication system. Total security system may solve this problem since number of parameters like face, speech, fingerprint, palm print etc. are undeniably connected to its owner. It is also verify quantitative data like E-cards, password and Login ID etc. of human being. In this paper we have discussed the security system based on speech recognition and body expressions of human kind through mathematical model and Hidden Markov model. This proposed model for the system can compare the

recorded speech and body expressions with original speech and body expressions which is stored in a central or local database to give perfect identification.

CPM140.MINING FREQUENT ASSOCIATION PATTERNS IN PROTEIN SEQUENCES OF WEST NILE VIRUS

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ABSTRACT:-

West Nile Virus (WNV) is a mosquito borne arthropod virus and now considered to be an endemic pathogen in Africa, Asia, Australia, Middle-East Europe and United States. This virus may cause severe neuroinvasive diseases often leading to death. No specific medication exists to treat West Nile Virus and there is currently no vaccine available to cure this disease. Study of amino acid association patterns in protein sequences of WNV can be useful in understanding mechanisms of the disease. Here an attempt has been made to discover association patterns in amino acid sequences of WNV. The sequence data has been taken from NCBI to perform the mining. The results obtained can be useful in prediction of structure and function of proteins of WNV.

CPM141.A MODEL FOR MINING FUZZY ASSOCIATIONS OF AMINO ACIDS IN PROTEIN SEQUENCES OF HUMAN HERPES VIRUS TYPE 6

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Abstract: The proteins are the basic building blocks of the cell of an organism. The association patterns of amino acids vary with the protein sequences of organism. The knowledge of these association patterns of amino acids is crucial for understanding the structure and function of the protein. In this paper an attempt has been made to develop a model for mining association patterns in peptide sequences of Human Herpes Virus (HHV) type 6. Two thousand one hundred and thirty five sequences of HHV6 virus were taken from NCBI to perform the mining. The association patterns generated can be used as signature for prediction of structure, function and interaction of proteins.

CPM142.MINING FUZZY AMINO ACID ASSOCIATIONS IN VERICELLA ZOSTER VIRUS

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ABSTRACT:
Chicken pox is caused by vericella zoster virus. Vericella zoster is a member of Herpes virus family. The person infected by this virus develops extremely itchy blisters all over the body. Soothing baths, lotions, Antihistamines and antiviral drugs are used as the treatment. However the virus due to the mutation during evolution develops resistance to the drugs. Therefore it is crucial to understand association patterns of amino acids in peptide sequences of virus. In view of above an attempt has been made to mine fuzzy association rules in vericella zoster virus. The patterns discovered will be helpful for understanding the structure and function of the proteins of the virus. This information would further be useful for diagnosis and treatments of chicken pox.

CPM143.MINING MAXIMAL FREQUENT AMINO ACID ASSOCIATIONS IN PROTEIN SEQUENCES OF YELLOW FEVER

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Abstract: Yellow Fever is a serious disease caused by the yellow fever viruses. A good number of protein sequences for yellow fever are available in online-biological databases. These sequences consist of crucial information in the form of patterns which can be explored and used for prediction of structure and function of the proteins. In this paper an attempt has been made to discover Maximal Frequent Amino Acid Association patterns from the available sequence data of Yellow Fever. The results have been used to generate association rules.

CPM144.MINING FREQUENT ASSOCIATION IN PEPTIDE SEQUENCES OF LEISHMANIA DONOVANI

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Abstract: Leishmaniasis is a disease caused by protozoan parasites of the leishmania genus. This disease is the second largest parasitic killer in the world (after malaria), responsible for an estimated 50, 0000 cases each year worldwide. In this paper a model is proposed for mining frequent association patterns in peptide sequences of leishmania donovani. The support and confidence of associations have been computed. The results generated have been used to identify signatures which can be useful in understanding structure, function and interaction of proteins.

CPM145.MINING AMINO ACID ASSOCIATION PATTERNS IN PROTEIN SEQUENCES OF MEASLES VIRUS

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Abstract: Measles virus of the genus Morbillivirus causes an infection of the respiratory system called measles. The study of association patterns in this virus can be useful for the understanding of mechanisms and activities involved in the diseases. In this paper an attempt has been made to discover amino acid association patterns in peptide sequences of Measles virus. The protein sequences of the virus have been taken from online biological database NCBI for performing the mining task. The maximal frequent patterns of amino acids have been discovered from the sequences. These patterns can be used for development of mechanisms for diagnosis and treatment of the disease.

CPM146.MINING AMINO ACID ASSOCIATION RELATIONS IN PROTEIN SEQUENCES OF SARS VIRUS

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Abstract: The protein sequences are made up of 20 amino acids. These amino acids appear in different arrangements in different proteins in relation to the organism for a disease. Therefore it is crucial to understand these arrangements of amino acid in protein sequences, in order to understand the mechanisms of diseases. In this paper the association relations in SARS virus are explored using association rule mining algorithm. These relations are used to generate the association rules.

CPM147.MINING AMINO ACID ASSOCIATION RELATIONSHIPS IN PROTEIN SEQUENCES OF VIBRIO CHOLERAE

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Abstract: Cholera is an infection in the small intestine caused by the bacterium vibrio cholerae. Plenty of nucleotide and peptide sequences of vibrio cholera are available in online databases like NCBI. These sequences can be analyzed to generate the hidden information which can be useful for prediction of structure and function of the protein. Here an attempt has been made to extract association relationships in peptide sequences of vibrio cholerae. The results generated by above analysis are used to predict association rules.

CPM148.MINING AMINO ACID RELATIONSHIPS IN PROTEIN SEQUENCES OF MYCOBACTERIUM LEPRAE

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Abstract: Leprosy, also known as Hansen's disease (HD), is a chronic disease caused by the bacteria Mycobacterium leprae. Leprosy is primarily a granulomatous disease of the peripheral nerves and mucosa of the upper respiratory tract, skin lesions are the primary external sign. The analysis of peptide sequences of M. Leprae can reveal information, which may be useful for understanding the structure, function and interaction of proteins. In this paper an attempt has been made to develop a model for mining amino acids association patterns in peptide sequences of M .Leprae. Support and confidence of associations have been computed. The results generated, have been analyzed to identify the signatures which may be useful for better understanding of mechanisms involved in the disease.

CPM149. DISCOVERY OF ASSOCIATION RELATIONS IN PROTEIN SEQUENCES OF MENINGITIS

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Abstract: Meningitis is a bacterial infection of the membranes covering the brain and spinal cord (meninges). The most common causes are viral infections and other causes are chemical irritation, drug allergies, fungi and tumors. Here an attempt has been made to discover amino acid association relationships in protein sequences of meningitis. The sequence data has been picked up from online database NCBI. The relationships discovered can be of great use in understanding the structure, functions and interaction of proteins of meningitis.

CPM150. MINING AMINO ACID ASSOCIATIONS IN PEPTIDE SEQUENCES OF HERPES SIMPLEX VIRUS

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Abstract: Herpes Simplex is a viral disease caused by both viruses Herpes Simplex Virus type-1 (HSV-1) and type-2 (HSV-2). Herpes infections can affect eyes, skin, genital organs, mouth, face and other parts of the body. There is no method to eradicate herpes virus from the body but antiviral medications can reduce the frequency and duration. The association patterns of amino acids in the protein sequences of the viruses can shed the light on the mechanisms of infection. In view of above, an attempt has been made to mine amino acid associations in the protein sequences of herpes simplex virus. The sequences of virus

have been taken from NCBI to mine the relationship. The association relationship discovered can be useful for development of mechanisms for diagnosis and treatment of the disease.

CPM151. MINING AMINO ACID ASSOCIATIONS IN PEPTIDE SEQUENCES OF HTLV-I VIRUS

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Abstract: Human T-cell leukemia virus type-I (HTLV-I) is a member of Retroviridae family in the genus Deltaretrovirus, which includes HTLV-II, bovine leukemia virus and semian T-cell leukemia virus (STLV). Adult T-cell leukemia (ATL) disease is characterized by its symptoms on skin, liver, gastrointestinal tract and lungs, hyper calcemia and the presence of leukemic cells. There are approximately 10-20 million HTLV-I carriers in world. Morevere, this virus also causes the neurodegenerative disease and HTLV-I associated myelopathy/tropical spastic paraparesis(HAM/TSP). The association patterns of amino acid sequences in HTLV-I can be useful in understanding the mechanisms of the disease. In view of above, an attempt has been made to discover amino acid associations in proteins of HTLV-I virus. These patterns can serve as signatures for the development of protocols for diagnosis and treatment of the disease.

PM152. MODEL FOR MINING FREQUENT AMINO ACID ASSOCIATIONS IN PEPTIDE SEQUENCES OF DENGUE VIRUS

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Abstract: Dengue fever is an infectious tropical disease caused by Dengue Virus. It is transmitted by several species of mosquito with-in genus Aedes. The Dengue virus genome contains 11000 nucleotide bases. It infects around 50 to 100 million people worldwide in a year and there is no approved vaccine for it. The association patterns of amino acids in the protein sequences can reveal significant information for understanding of functions and mechanisms of the disease. Here an attempt has been made to mine frequent amino acid association in Dengue Virus. The protein sequences are taken from online database NCBI. The association relationships of amino acids with various parameters have been studied with the help of the results.

CPM153. MINING FREQUENT AMINO ACID ASSOCIATIONS IN PROTEIN SEQUENCES OF TRICHOPHYTON RUBRUM

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Abstract: Onychomycosis is a disease caused by infection of nail by a fungus. It affects toe nails and finger nails, but toenails are particularly common. For development of effectiveness of antifungal agents for nail infection, it is crucial to understand association patterns of amino acids in protein sequences of trychophyton rubrum .Here an attempt has been made to discover frequent amino acid patterns in protein sequence of Trichophyton rubrum. The sequences have been taken from NCBI for performing the mining task. The patterns generated can be used for understanding structure, function, and interaction of proteins.

CPM154. MODEL FOR EXPLORING AMINO ACID ASSOCIATION PATTERNS IN PEPTIDE SEQUENCES OF CREUTZFELDT JACOB DISEASE (CJD)

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Abstract: CJD is a fatal degenerative neurological disorder found in humans. In CJD brain develops holes and takes a sponge like form, caused by prions. Prions are misfolded proteins which replicate by converting their properly folded counterpart. No appropriate treatment is available for this disease till date as the mechanisms of this disease are very poorly understood. In view of above a model has been developed to explore amino acid association patterns in peptide sequences of CJD. The support and confidence of association patterns have been computed. Patterns generated are analysed to identify the signatures which may be of great use in prediction of structure, function and interaction of proteins.

CPM155. MINING ASSOCIATION RELATIONSHIPS IN PEPTIDE SEQUENCES OF FATAL FAMILIAL INSOMNIA

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Abstract: Fatal familial insomnia (FFI) is a very rare autosomal dominant inherited prion disease of the brain. It is almost always caused by a mutation of the protein PrP^c , but can also develop spontaneously in patients with a non inherited mutation variant called sporadic Fatal Insomnia (sFI). FFI has no known cure and involves progressively worsening insomnia which leads to hallucinations, delirium and confusional states like that of dementia.
The peptide sequences contain crucial information which can be useful in understanding the protein interactions involved in the disease. In view of above a model for mining association relationships among amino acids in peptide sequences of FFI has been developed. The results obtained have been used to identify the signatures which can be useful in understanding the structure and function of the peptide sequences.

CPM156. MINING FREQUENT ASSOCIATION PATTERNS IN PEPTIDE SEQUENCES OF KURU

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Abstract: Kuru disease is an Incurable degenerative neurological disorder that is a type of transmissible Spongiform encephalopathy caused by a prion found in humans. It is also known among the fore as the laughing sickness. Due to pathologic burst of laughter people would display when afflicted with the disease.Kuru is believed to be caused by prions and is related to Cruetzfetldt-Jacob disease(CJD).

The peptide sequence of kuru can be analysed to generate information for better understanding of the mechanisms of disease. In view of above a model for exploring Association patterns of amino acids in peptide sequence of Kuru has been developed. The results obtained have been used to identify the Signatures which can be useful for understanding the structure, functions and interactions of proteins of Kuru.

CPM157. A MODEL FOR MINING AMINO ACIDS ASSOCIATIONS IN PEPTIDE SEQUENCES OF BOVINE SPONGIFORM ENCEPHALOPATHY

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Abstract: BOVINE SPONIFORM ENCEPHALOPATHY (BSE), commonly known as Mad Cow disease, is a fatal neurodegenerative disease in cattle that causes a spongy degeneration in the brain and spinal cord. It infects not only the cattle but also can be transmitted to human beings by eating food contaminated with the brain spinal cord or digestive tract of infected carcasses. At present , there is virtually no way to detect PrP (Prion Protein) reliably except by examining post mortem brain tissue using neuropathological and immunohistochemical methods. The peptide sequences of BSE can be analysed to extract the information which may be crucial for understanding the structure, function and interaction of proteins involved in disease. In view of above a model has been developed for mining amino acid associations in peptide sequences of BSE. The sequences are taken from NCBI in FASTA format. The support and confidence have been computed for the amino acid associations. The results generated have been analysed to identify the signatures which may be useful in understanding the various mechanisms of the disease.

CPM158. MINING FREQUENT ASSOCIATIONS IN PEPTIDE SEQUENCES OF TRANSMISSIBLE MINK ENCEPHALOPATHY

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Abstract: Transmissible Mink Encephalopathy (TME) is a progressive fatal neurodegenerative disease that affects ranched mink. Most or all of the adult animals on a ranch may be affected; and once an animal becomes symptomatic, death is inevitable. This disease is still poorly understood. The analysis of peptide sequences of TME can reveal crucial information to understand the various mechanisms of the disease. In our work an attempt has been made to develop a model for exploring frequent association patterns in peptide sequences of TME. The support and confidence for each association pattern has been computed. The signatures generated from the analysis can be useful in development of protocols for diagnosis and treatment of the disease.

CPM159. Fractional Integration and Differentiation of Hypergeometric Function for Power Function And Modified M- Function

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Abstract: In This paper, we Will convert hypergeometric function into hypergeometric function for power function and Modified M- Function. The applications of hypergeometric function in a various field of physical and applied science are demonstrated, the success of the application of hypergeometric function in many areas of science and engineering. So, the function and its properties are useful for solving the problems in physics, biology and science.

CPM160. Mathematical Modelling of Consumption of Nutrients in Tumor Region

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Abstract— Malignant cells characteristically exhibit altered metabolic patterns when compared with normal mammalian cells with increased reliance on anaerobic metabolism of glucose to lactic acid even in the presence of abundant oxygen. The inefficiency of the anaerobic pathway is compensated by increased glucose flux, a phenomenon first noted by Otto Warburg, some 80 years ago and currently exploited for 2-fluoro-2-deoxy-Dglucose-positron emission tomography imaging in clinical radiology.
In this paper we investigate the consumption of glucose with varying concentration of oxygen through mathematical models. We propose a one dimensional time-dependent mathematical model of partial differential equations governing the concentrations of glucose and oxygen in the tumor region and effect of their consumption on the growth of tumor. Numerical methods have been applied to find out the solutions of these equations. This quantification of primary nutrients along with the number of cells in proliferating, quiescent and dead phase will give a better assessment of avascular tumor growth.

CPM161. Two Dimensional Finite Element Model to Study Ca^{2+} Dynamics in a Neuron Cell Involving ER Leak and Serca

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Abstract: In this paper, Finite element approach using two-dimensional unsteady state problem has been developed to study radial and angular calcium diffusion problem in a neuron cell. Calcium is responsible messenger for transmit information in communication process between neuron cells. The most important Ca^{2+} binding proteins for the dynamics of Ca^{2+} is itself buffer and other physiological parameters that are located in Ca^{2+} stores. In current study, the model incorporates the physiological parameters like diffusion coefficient, receptors, exogenous buffers etc. Appropriate boundary conditions have been framed in view of the physiological conditions. Computer simulations in MATLAB 7.11 are employed to investigate mathematical models of reaction diffusion equation, the details of the implementation can heavily affect the numerical solutions and, thus, the outcome simulated on Core(TM) i3 CPU M 330 @ 2.13 GHz processing speed and 3 GB memory.

CPM162. A note on Soft Computing Approach for Cardiac Analysis

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Abstract: Coronary Heart Disease affects millions of people every year. CHD is leading cause of mortality. In heart disease diagnosis, we encounter vagueness in information and uncertainty in decision making, so it is very difficult to reach to certain result for our proposed solution. Aim of this study is to design a Fuzzy Expert System to determine coronary heart disease (CHD) risk of patients in India. The system designed on Matlab Software. The designed system gives the person the ratio of the risk and may recommend whether person has to live life normally or with diet or with drug treatment. The system can be viewed as an alternative for existing methods to determine CHD risk.

CPM163.ON CERTAIN INTEGRAL EQUATIONS INVOLVING I- FUNCTION

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Abstract: In this paper we have established a theorem which provides solution to an integral equation involving product of Saxena's I- function and Bessel-Maitland function as the kernel. We have used Erdelyi-Kober operators in the form of fraction integral to make head way to arrive at an exact solution of the integral , which is of Fredhlom type. Emphasis has been given to the existence condition of the solution.

CPM164.A COMMON FIXED POINT THEOREM SATISFYING CONTRACTIVE CONDITION OF INTEGRAL TYPE

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Abstract: In this paper we prove some fixed point theorems for compatible mapping satisfying a contractive condition of integral type in complete metric spaces .Which shows that our main theorem is generalized version of theorems in integral type using rational and general type expressions.

CPM165. FIXED POINT THEOREMS FOR MAPPINGS OF INTEGRAL TYPE UNDER GENERAL CONTRACTIVE CONDITION

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Abstract: In the present paper, we establish a fixed point theorem for a mapping and a common fixed point theorem for a pair of mappings. The mapping involved here generalizes various types of contractive mappings in integral setting.

CPM166.Ordered Power Product of Polynomials and New Product Cyclic Codes

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Abstract: The paper introduces a new product of polynomials defined over a field. It is a generalization of the ordinary product with inner polynomial getting non-overlapping segments obtained by multiplying with coefficients and variable with expanding powers. It is called 'Ordered Power Product' (OPP). Considering two rings of polynomials $R_m[x] = F[x]$ modulo $(x^m - 1)$ and $R_n[x] = F[x]$ modulo $(x^n - 1)$, over a field *F*, the paper then considers the newly introduced product of the two polynomial rings. Properties and algebraic structure of the product of two rings of polynomials are studied and it is shown to be a ring. Using the new type of product of polynomials, we define a new product of two cyclic codes and devise a method of getting a cyclic code from the 'ordered power product' of two cyclic codes. Conditions for the OPP of the generators polynomials of component

codes, giving a cyclic code are examined. It is shown that OPP cyclic code so obtained is more efficient than the one that can be obtained by Kronecker type of product of the same component codes.

CPM167.Insilico Prediction model for structure prediction and mutagenic studies for identification of optimal active sites in GPR12

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Abstract: GPR12 protein belongs to G-protein coupled receptor Rhodopsin family. It is critical for the normal functions of many cell types: neurons, endocrine cells, cardiac and smooth muscle cells,and sensory cells for detection of light, taste, and smell. Both activating and loss-of-function mutations in G protein-coupled receptors have been found as the cause of human diseases. From the literature survey it has been found that sphingosine-1-phosphate [1] acts as ligand for GPR12. Since the 3D structure of GPR12 was not available, homology modeling was done to predict the structure. Docking was performed on the drug (Sphingosine-1-Phosphate).The docking exploration revealed that Arg138 and Phe267 are critical for H-bond interaction, whereas Leu140, Tye139, Asp137, Thr268 make extensive van der Waal and hydrophobic contacts. Here an attempt has been made by simulating bonds and functional groups of Sphingosine-1-Phosphate and comparative analysis has been made in term of stability of the protein. Structure based site directed mutagenesis was carried on modeled protein to investigate the protein-ligand interaction on few specific position in the region of interest.

CPM168. FINITE ELEMENT MODEL TO STUDY EFFECT OF BUFFERS ALONG WITH LEAK FROM ER ON CA^{2+} DISTRIBUTION IN MUSSEL OOCYTES

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Abstract: Calcium dynamics in oocytes plays an important role in oocyte maturation. The calcium concentration is regulated at high levels in oocytes through various mechanisms in order to meet the requirements of oocyte maturation. The understanding of these mechanisms are crucial in understanding the processes of reproduction. In this paper an attempt has been made to develop a finite element model of calcium dynamics in Mussel oocytes. The model incorporates the parameters like diffusion coefficient, leak from Endoplasmic Reticulum(ER), and buffers namely BAPTA and EGTA. The proposed model is solved numerically using appropriate initial and boundary conditions. A program has been developed in MATLAB 7.11 for the entire problem and simulated on a 32-bit machine to compute the numerical results. The effect of BAPTA, EGTA and Leak from ER is studied in the neighbourhood of L-type calcium channel on calcium distribution in Mussel oocytes.

CPM169. IMPACT OF POLLUTION ON WILD LIFE DISTRIBUTION : A MATHEMATICAL STUDY

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Abstract: Wild life distribution in a forest area depends on several factors including flora,water bodies, topography and terrestrial environment.
In most of the analytic studies the last factor is ignored, though it plays important role in the growth of the fauna.
In this paper we intend to develop a mathematical model of population dispersion of wild animals under the effect of environmental pollution.
The region under consideration is divided into patches depending upon important factors.
The population distribution is estimated mathematically and numerically.

CPM170.TRIPLE JACOBI TRANSFORM AND ITS RECURRENCE RELATIONS

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Abstract: In this paper we define three dimensional integral transform involving Jacobi polynomials. This transform is known as Triple Jacobi Transform. We establish an inversion formula and recurrence relations of the transform. This transform can be used to solve three dimensional mixed boundary value problems.

CPM171.Axisymmetric creeping flow of a micropolar fluid over a sphere coated with a thin fluid film

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Abstract: Consideration is given to the problem of steady axisymmetric Stokes flow of a micropolar fluid past a sphere coated with a thin, immiscible Newtonian fluid layer. Inertial effects are neglected for both

the outer fluid and the fluid film. The stream function solutions of the governing equations are obtained in terms of modified Bessel functions and Gegenbauer functions. The explicit expressions of flow fields are determined by applying the boundary conditions at the coated sphere interface and uniform velocity at infinity. The drag force experienced by the fluid-coated sphere is evaluated and its variation is studied with respect to various geometric and material parameters. It is found that a sphere without coating experience greater resistance in comparison to coated fluid. Some well-known results are then deduced from the present study.

CPM172. MODEL FOR MINING ASSOCIATION PATTERNS IN NUCLEOTIDE SEQUENCES OF MYCOBACTERIUM TUBERCULOSIS COMPLEX

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Abstract: Mycobacterium Tuberculosis Complex (MTBC) is one of the major infectious diseases and leading cause of deaths worldwide. The molecular sequences of MTBC can be analyzed to reveal the information , which is crucial for understanding the mechanisms of infection, regulation, pathogenicity and control of the disease. In view of above a model has been developed to explore nucleotide association patterns in peptide sequences of MTBC. A model has been developed using fuzzy set. The nucleotide sequences of MTBC are taken from online database "NCBI". The association patterns have been obtained for 8 families of MTBC. The patterns generated can be useful in development of protocols for diagnosis and treatment for MTBC.

CPM173. MODEL FOR MONING FUZZY ASSOCIATION RULES IN NUCLEOTIDE SEQUENCES OF FLAVIVIRUS

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Abstract: Flavivirus is a cause of various diseases like yellow fever, Japanese encephalitis, St Louis encephalitis, West Nile, Ilheus, Murray Valley encephalitis, Louping ill encephalitis and Russian Spring-Summer encephalitis. The study of relationships among nucleic acids and other parameters in molecular sequences of these virus are crucial for understanding mechanism of pathogenicity, infection ,regulation and control of the disease.In view of above an attempt has been made to develop a model for mining association patterns in the nucleotide sequence of flavivirus. The sequences have been taken form online database "NCBI". Due to uncertainty in data relationships fuzzy set approach is employed to generate the association relationships for 10 families of flavivirus. The results generated have been analyzed for similarities and differences in the signatures of each family.

CPM174.MACHINE LEARNING MODELS FOR THE CLASSIFICATION OF RIBOSOME INACTIVATING PROTEINS

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Abstract: The Ribosome Inactivating Proteins are mostly of plant origin and have proven to play vital role in treatment of severe ailments. The Ribosome Inactivating Proteins are the precursors of several synthetic drugs many of them act as lead compounds for the same. The experimental approaches for the classification of phyto-proteins are quite expensive and time consuming. Thus there is a need for development of fast computational approaches for classification of phyto-proteins. In the present paper a machine learning model for classification of Ribosome Inactivating Proteins has been developed. The present study involves various machine learning classifiers like Bayes net, and Naive Bayes, Multilayer Perceptron, RBF Network, Logistic, Simple logistic, J48 and Random Forest. The accuracy for Bayes Net is 96.2%, for Naïve Bayes is 95.7%, for Multilayer Perceptron is 97.84%, for RBF Network is 98.34%, for Logistic is 96.8%, for Simple logistic is 98.9%, for is J48 96.2% and for Random Forest is 95.1351%.

CPM175.Modelling bimodal characteristics of traffic flows

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Abstract: Bimodal characteristics of vehicular traffic flows have been modelled mathematically. Set up as a dynamical system, the bimodal distribution is seen to have a fixed point that is connected to itself by a homoclinic solution. The conditions giving bimodality have been established. They are shown to cause symmetry breaking in the model, and a shift from bimodal to unimodal behaviour.

CPM176. A Variational Finite Element Method to Thermoregulation of Intraocular Temperature in Human Eye.

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Abstract: To present a mathematical model that predicts the temperature distribution within the human eye at different rates of evaporation and atmospheric temperatures. The human eye is lubricated with a thin oil layer and has a layer of tear film on the top of cornea. This layer is constantly evaporated and refreshed through the blinking of the eyelids. This model investigates the effect of evaporation of tears on the outer corneal surface as evaporation of tears increases the cooling rate on the corneal surface. This study also analyses the effect of variable atmospheric temperature on the corneal temperature involving different rate of evaporation.
The model that computes the intraocular temperature distribution in human eye is developed by employing the Pennes bioheat transfer equation and is solved using Variational Finite Element Method (VFEM). On the outer surface the heat radiation is assumed to be negligible, whereas on the inner surface the Robin condition is considered. Different values for the parameters reported in ophthalmic literature are employed in the model. The effect of the ambient temperature and the body core temperature on the temperature distribution in the human eye is incorporated.
This study confirms the cooling effect of variable rate of evaporation and clarifies that in case, the oil layer of tear film is damaged; excess water evaporates from the eye and hence can be fatal to human eyes.

CPM177. TRIPLE INTEGRAL EQUATIONS INVOLVING FOX'S H – FUNCTIONS

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The solution of triple integral equations involving H-function as symmetrical Fourier kernel is obtained by the method of fractional integration. The given triple integral equations are transformed to other triple integral equations with a common kernel by the application of fractional Erdelyi-kober operators and the problem then reduced to that of solving one integral equation by means of theorem of Mellin Transform.

CPM178.New Generalized Measures of Fuzzy Directed-Divergence, Total Ambiguity and Information Improvement

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Abstract: In the present communication, we introduce new generalized measures of fuzzy directed divergence and symmetric divergence and prove their validities. Some measures of total ambiguity and fuzzy information improvement have been defined and studied. Particular cases of corresponding directed divergence and symmetric divergence have been discussed.

CPM179.UPPER AND LOWER CONTROL LIMITS FOR MEANS IN CASES OF NON-NORMAL VARIATION AND EWMA MODEL

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Abstract: The aim of this paper is to study the problem of setting up control limits for means in cases of non-normal variation and EWMA model. The non-normal distribution has been represented by the first four terms of an edgeworth series. The values of standardized cumulant □3 = $\sqrt{\beta_1}$, and □4 = β2-3 considered are within Barton and Dennis (1952) limits, which means that for such values the population is positive definite *and unimodal*. For various non-normal populations and different values of □ under

EWMA model, the values of upper and lower control limits are tabulated and compared with those of the normal population.

CPM180. A Soft Set Approach for Fuzzy Association Rule Mining

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Abstract: In this paper, a soft set approach has been developed for mining fuzzy association rules from a transactional data set.The transactional data set is represented as soft set using the concept of parameter co occurrences in the transaction.The fuzzy membership is determined for each element based on the concept of co-occurrences in the transactional data set which is further used to compute a fuzzy support and fuzzy confidence for the association rules. The fuzzy soft set approach has been illustrated with the help of an example and experiment on a real world data set. The results of fuzzy soft set approach have been compared with those obtained by soft set approach for association rule mining. The fuzzy soft set approach gives better picture of association relationship, confidence levels and is helpful in addressing the issues of under-prediction and over-prediction of association rules.

CPM181.Insilico Prediction of Riboswitch and Design of its Optimal Inhibitor for Anthrax.

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Abstract: Aerosolized anthrax bacteria *Bacillus anthracis* are commonly used as bioweapons to cause an epidemic in different parts of the world. Some in-vitro studies have reported that antibiotic therapy of *Bacillus anthracis* bacteria for longer duration can induce antimicrobial resistance in the bacteria. Thus there is a need to explore an alternate drug target, to develop a potent drug to overcome the problem of drug resistance and the side effects associated with the use of antibiotic drugs for treatment of anthrax infection in humans and animals. In the present study a promising dimension riboswitch is explored as a potential drug target for inhibition of anthrax bacteria. A framework has been developed for the prediction of riboswitch as potential drug target and design of corresponding inhibitor for *B. anthracis* bacteria. The DNA sequence responsible for the riboswitch production present in the genome of anthrax bacteria is identified using online program Riboswitch Explorer. This gene sequence is transcripted to its riboswitch and its three dimensional (3D) structure is predicted by using online program iFoldRNA. The predicted 3D structure is used for identification of the appropriate ligand binding site by using the blind docking technique with the help of AutoDock. The identified binding site is further docked by 20 different amino acids to identify the appropriate substrate ligand, which was found to be lysine. The identified binding site is then virtually screened with molecular library containing 1880 diverse ligands using molecular docking simulation. Five lead molecules were identified which satisfied the Lipinski's rule of five. Out of these three lead molecules ZINC19362650, ZINC01729524 and ZINC19325791 passed the test of ADME and toxicity with a good drug likeness score and thus were identified as potential inhibitors for anthrax. It is concluded that the riboswitches can be alternative potential drug targets for anthrax bacteria and lead molecules identified by virtual screening may act as a riboswitch based potential inhibitor of *Bacillus anthracis* bacteria to counter the epidemic caused due to biowarfare. Further riboswitch based inhibitor may be useful to overcome the present issues of existing drugs like their side effects, resistance etc.

CPM182. SENSITIVITY ANALYSIS OF AMERICAN CALL OPTIONS

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Abstract: In this paper a model of American Call Options is developed incorporating volatility, strike price, stock price, rate of interest and the time of expiration. The Black Scholes equation[2,4] is employed to construct the model. The appropriate boundary conditions are framed. Approximation method is employed to obtain the solution for American call option. Sensitivity Analysis of American call option is performed by finding the behavior of Delta, Gamma, Theta, Vega and Rho.

CPM183. A Common Random Fixed Point Theorem in Hilbert Space Using Integral Type Mapping.

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Abstract: The object of this paper is to obtain a common random fixed point theorem for four continuous random operators defined on non empty closed subset of a separable hilbert space for integral type mapping. Our results extend, generalize and improve the corresponding results given by many authors.

CPM184. HORIZONTAL PHEROMONE DIFFUSION IN STILL ATMOSPHERE AFTER BEE BITE

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Abstract: This paper describes release and diffusion of chemical pheromone by successive biting of honey bees to a moving human subject. The release of pheromones by a bee after biting a person attracts other bees one after another. This problem gives concentration distribution of pheromones in the area, under the attack of bees. A two dimensional model has been constructed for this problem and exact solution has been obtained for the solution of the model.

CPM185.A new method for ranking the interval valued intuitionistic fuzzy numbers and its application to multi-criteria decision making

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Abstract: Atanassov (1986) introduced the notion of intuitionistic fuzzy sets (IFSs) as an extension of fuzzy sets proposed by Zadeh (1965). It is characterized by two functions expressing the degree of membership and the degree of non-membership respectively. Atanassov and Gargov (1989) further extended the intuitionistic fuzzy set to interval-valued intuitionistic fuzzy set (IVIFS), which is characterized by a membership function and a non-membership function whose values are in intervals rather than real numbers. The IVIFS have received more and more attention since it appearance and applied to various fields, such as decision making, medical diagnosis, pattern recognition market forecast, etc. Multi-criteria fuzzy decision making (MCDM) has been one of the fastest growing areas during last two decades because of its usefulness and fascination. In multi-criteria decision making under IVIFSs environment, a decision maker provides his/her ratings of the alternatives with respect to criterions are represented by interval valued intuitionistic fuzzy numbers (IVIFNs). For decision making using the IVIFNs, it is required to rank the IVIFNs. Many scholars have paid attention on this issue over last decades and developed several methods for ranking IVIFNs.
In this paper, a new method for ranking the interval valued intuitionistic fuzzy numbers is proposed. We also develop a method to solve multi-criteria decision making problems with the help of proposed ranking method under interval valued intuitionistic fuzzy environment. Finally, a numerical example is given to verify the developed approach and to demonstrate its practicality and effectiveness.

CPM186. Theoretical results such as local stability and bifurcation of a logistic predator-prey model subject to the Allee effects

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Abstract: In recent years, many theoreticians and experimentalists have concentrated on the processes that a_ect of the stability of predator-prey models. But few papers have adressed the Alee e_ect with focus on their stability. In this work, classical model describing predatorprey models with the Allee e_ects into the predator population dynamics. Dynamics such as boundedness, local stability and bifurcation of model are studied. In this paper theoretical results has been discussed.

CPM187. Optimality Conditions and Second-Order Duality for Nondifferentiable Multiobjective Continuous Programming Problems

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Abstract: Fritz John and Karush-Kuhn-Tucker type optimality conditions for a nondifferentiable multiobjective variational problem are derived. As an application of Karush-Kuhn-Tucker type optimality conditions, Mond-weir type second-order nondifferentiable multiobjective dual variational problems is constructed. Various duality results for the pair of Mond-Weir type second- order dual variational problems are proved under second-order pseudoinvexity and second-order quasi-invexity. A pair of Mond-Weir type dual variational problems with natural boundary values is formulated to derive various duality results. Finally, it is pointed out that our results can be considered as dynamic generalizations of their static counterparts existing in the literature.

CPM188. Mixed Type Second-order Duality for a Nondifferentiable Continuous Programming Problem

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Abstract: A mixed type second-order dual is formulated for a class of continuous programming problem in which the integrand of the objective functional contains square root of positive semi-definite quadratic form; hence it is nondifferentiable. Under second-order pseudoinvexity and second-order quasi-invexity, various duality theorems are proved for this pair of dual nondifferentiable continuous programming problems. A pair of dual continuous programming problems with natural boundary values is constructed and it is briefly indicated that the duality results for this pair of problems can be validated analogously to those for the earlier models. Lastly, it is pointed out that our duality results can be regarded as dynamic generalizations of those for a nondifferentiable nonlinear programming problem, already treated in the literature.

CPM189. FINITE PARTITION APPROCH TO UNSTEADY STATE TEMPERATURE DISTRIBUTION PROBLEM IN HUMAN LIMB IN WATER

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Abstract: In this paper mathematical and numerical study of thermal variations has been carried out for transient temperature distribution in cylindrical human organs like hand and leg. A two dimensional circular region resembling the cross section of a human or animal limb is considered. The biological properties are assumed to vary along the radial direction. The theoretical model incorporates the effect of blood mass flow and metabolic heat generation. The region is divided into annular sub-regions and Ritz variational finite element method is applied along the radial direction, while for the angular direction, Fourier series has been used due to uniformity in each annular part. The boundary condition used in this paper is related to limbs dipped in water.

CPM190.A Fractional Integro-differential Equation of Volterra Type

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Abstract: This paper deals with a investigation of a closed form solution of an fractional Integro-differential equation of Volterra type associated with Saigo-Maeda fractional calculus operator. The solution of proposed problem is obtained in a compact form of Saxena's I-Function by using technique of Mellin transform and its inverse. Some particular cases have also been considered.

CPM191. On Some Applications of Lie Theoretic Approach to Basic Analouge of Meijer G-function

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Abstract: Having defined the q-recurrence relations of basic analogue of Meijer's G-function by using technique of q-calculus and a basic function of several variables for the said function. We have been construct the various q-difference operators and their Lie algebra. The operators used to characterize the generating functions.

CPM192. Two Dimensional Finite Element Model to Study The Effect of VGCC on Calcium Distribution in Astrocytes

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Abstract: Astrocytes are also known to express voltage- gated Ca2+ channels similar to those found in neurons. Calcium ion Ca2+ is a second messenger which plays an important role in signal transduction. The main objective of this work is to study effect of voltage-gated calcium channel on cytosolic calcium concentration in astrocytes in the form of diffusion equation. A mathematical model is developed to study interdependence of all the important parameters like diffusion coefficient and influx over [Ca2+] profile. Appropriate boundary condition has been framed. Finite element method is employed to solve the problem. A program has been developed using in MATLAB 7.5 for the entire problem and simulated on an AMD-Turion 32-bite machine to compute the numerical results.

CPM193. Thermal effect of Atmosphere on Temperature Distribution in outer parts of Human Body

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Abstract: This paper present a Finite Element Method (FEM) application to study three layers of human dermal parts of varying properties. This paper carries out investigation of temperature distributions in these layers, namely epidermis, dermis and under lying tissue layer. It is assumed that outer skin is exposed to atmosphere and the loss of heat due to convection, radiation and evaporation of water have also been taken into account. It is also assumed that the biochemical reactions which produce heat, are dependent on atmospheric temperature.

CPM194. IMPACT OF AIR POLLUTION ON ECOSYSTEMS INVOLVING HUMAN POPULATIONS

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Abstract: The presence of pollutants in the environment cause climatic variation with decay (or deaths) and migration of human population in cities and towns located near sources like oil refineries. In this paper we have given mathematical models of air pollutions and its impact on human population.
The variation of the total population size is determined by two processes: birth and death. The birth process is characterized by the birth rate, the population's ability to grow in number. It depends upon the size and composition of the population, as well as upon the physical conditions of the environment. This includes climatic fluctuations caused by long range air pollution.
A population is generally a group of individuals of a particular species occupying a particular area at a specific time. Population is characterized with such characters group of individuals of particular species occupying a particular area at specific dispersion, fluctuation in numbers, sex ratio, birth rate and death rate.

Population and biological has following characteristics:

1. Population size and density
2. Dispersion and migration
3. Natality (birth rate)
4. Mortality (death rate)
5. Life tables

In this paper we have given models for air pollution as well as dynamics of human population. The population models have air pollution as a major factor causing damage. The models have been quantitatively analyzed.

CPM195. Controllability of Fractional Order Retarded Semilinear Control Systems

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Abstract: This paper concerns with the approximate (exact) controllability of a fractional order retarded semilinear control system. The sufficient conditions for the approximate controllability have been established by assuming that the corresponding linear control system is approximately controllable. The results are proved under the Lipschitz continuity of the nonlinear function. Finally, an example is given to illustrate the developed theory.

CPM196. A Mathematical Model of Spatio-temporal Calcium Waves in Pancreatic Acinar Cell

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Abstract: Calcium, a vital second messenger for signal transduction in pancreaticacinar cell. It plays an important role in every organ of human body. Thus modelling of calcium signalling mechanism can help us to understand the phenomena in a better way. In this paper an attempt has been made to construct a mathematical model of calcium wave propagation in acinar cell. Calcium is released from inositol-triphosphatereceptors and ryanodine receptor that can be heterogeneously distributed throughout the cell. The apical and the basal region are separated by the region containing the mitochondria. Therefore an appropriate initial and boundary conditions have been framed and numerical solution is obtained to study calcium waves in acinar cell. The partial bifurcation analysis is performed which explores the dynamic behaviour of a model of calcium oscillations in both apical and basal region.

CPM197. Prediction of subcellular localization and function of hypothetical proteins of Mycobacterium tuberculosis H37RA strain

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Abstract: The Tuberculosis is the classical human mycobacterial disease, caused by *Mycobacterium Tuberculosis. Mycobacterium tuberculosis* is a facultative intracellular pathogen that has evolved the ability to survive and multiply within human macrophages. These bacteria comprise of significant proteins, which were involve in the pathogenesis and regulation of cell activity. Thus there arises the need to understand various parameters of these proteins for prediction of their functionality. The computational approaches for prediction of their classes are fast and economical therefore can be used to complement the existing wet lab techniques. Realizing their importance, in this paper an attempt has been made for the

insilico prediction of protein subcellular localization and major functions. As in the case of *Mycobacterium,* proteins are often involved in extensive interactions at various subcellular localizations in cell. Total one thousand four hundred and thirty-two hypothetical proteins of *M. tuberculosis* were predicted for four locations viz cytoplasmic, integral membrane, secretory and protein attached to membrane by Lipid anchor in the subcellular localization. And also major functions like virulence factors, information molecule, cellular process and metabolism molecule were predicted. Such predictions provide a method to annotate *Mycobacterium* proteomes with subcellular localization and functional information rapidly. And they have widespread applications in function of proteins in the host cell and in designing the tuberculosis drugs.

CPM198. A MODEL FOR MINING FUZZY AMINO ACID ASSOCIATIONS IN PEPTIDE SEQUENCES OF RHIZOBIALES.

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Abstract: Species belonging to the Rhizobiales are of great importance due to their ability to fix nitrogen when in symbiosis with leguminous plants and pathogenic bacteria to animals and plants. This order belongs to alpha proteobacteria and consists of 13 families which include plant endosymbionts, methane-oxidizing bacteria and a large number of nitrogen-fixing species. The associations of amino acids present in these bacteria can be explored and analyzed to generate the information which can be of crucial importance in understanding the structures, functions and interactions of these proteins. In view of above a model has been developed for mining fuzzy associations among amino acids in peptide sequences of families of rhizobiales. The fuzzy set approach has been used to incorporate the degree of relationships among amino acids of peptide sequences of different length. This approach addresses the issues of under prediction and over prediction of associations in peptide sequences. The divergence and convergence of association patterns with the families is analyzed to generate the association rules. The results generated are also correlated with structural and physiochemical properties.

CPM199. Common Fixed point theorems for contractive maps of Integral type in modular metric spaces

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Abstract: In this theorem we proves a common fixed point theorem for a pair of compatible maps , further generalization is done by the existence of Banach contraction mapping In fixed point theorem in modular metric spaces. Here we define the notion of ρ-compatible mappings satisfying a contractive condition of integral type in modular metric spaces.
We revised the basic definition and proves the common fixed point theorem for integral type ρ-compatible mappings in modular metric spaces with a brief re-collection of basic concept and theory of modular spaces as
Let X_ρ be a modular space, Two self mappings T and h of X_ρ are called ρ-compatible If $\rho(Thx_n - hTx_n) \to 0$, whenever$(x_n)$ $n \in N$ is a sequence in X_ρ such that
$hx_n \to z$ and $Tx_n \to z$ for some point $z \in X_\rho$.

CPM200. NEW DRAGON CURVES

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Abstract: Most of the dragons have space-filling property and have diverse applications, e.g., numerical computation of solutions of partial differential equations, hierarchical watermarking of digital images, traveling salesman problem, managing database etc. Different types of dragons have been generated by various researchers for space-filling, e.g., quadratic von Koch curve. Our purpose is to generate variants of quadratic von Koch curve that fill the space in significantly lesser number of approximations than the conventional quadratic von Koch curve. Additionally, some more beautiful and interesting dragons other than the quadratic von Koch curve have been generated. Further, it has been proved that all the new dragons are bounded in some region of the plane.

CPM201. Mathematical Study of One Dimensional Heat Distribution in Human Eye

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Abstract: Human eye is one of the important organs in human body. For thermal stability and physiological point of view, the heat distribution in the multi- layered human eye is a subject of interest. Therefore, it is imperative to study thermoregulation in human eye at various environmental temperatures. In this study, a mathematical model based on bio-heat equation was solved by using variational finite element method.

CPM202. A Remark on Merichev-Saio-Maeda Fractional Integrals Involving the K- Function

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Abstract: In this paper, we apply generalized operators of fractional integral involving Appell's function due to Marichev-Saigo-Maeda, to the K-function recently introduced by Sharma[Gen. Math. Notes Vol. 7 No.1, (2011)]. The results are expressed in term of generalized Wright function. Special cases are mentioned. Results given recently by Purohit et al[Le Matematiche, 67(2012), 21-32] and Kilbas et al[Integral Transforms and Special Functions, 19(12)(2008), 869-883].follow as special cases of the theorems derived here.

CPM203. Mathematical Estimation of fluid distribution in dermal regions with variable metabolic heat generation

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Abstract: The human body is composed of various intra-cellular and extra-cellular fluids. Dehydration and other changes in the system leads to various diseases. Thus it is imperative to study the fluid balance in the human body. We confine this study to estimate the pattern of fluid in human dermal regions by making use of Radial Bio-Heat Equation. The rate of metabolic heat generation in this study is assumed to be variable and variational FEM Technique has been employed for realistic values.

CPM204. Mathematical Modelling of Conservation and Production of Animal Species in Slaughtering Process

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Abstract: One of the important phenomena in real life is to maintain the stability in the existing ecosystem. It is a process of social and economic betterment that satisfies the needs and values of all interest groups without foreclosing future options. To this end, we must ensure that the demand on the environment from which we derive our sustenance, does not exceed its carrying capacity for the present as well as future generations.
In this direction, a mathematical model describing the conservation and optimal slaughtering for maximum profit in animal populations has been presented.

CPM205. Mathematical Modelling of Growth and Management, of Automobile Vehicles, with special reference to Bhopal City

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Abstract: The study is undertaken to evolve an empirical mathematical modeling by understanding the Demographic changes, Economic changes and analyzing its effects on the quantitative growth of automobile Industry. The area under study is the Districts of Bhopal. The rise in the Industrial and agricultural output indirectly helps Indian Auto Industry, the average growth which is about 9% in the last three year , along with this the growth in the road infrastructure, through projects like the Golden

Quadrilateral, underlines the importance of this growth. The rate of urbanization in India which has increased to 30% which is likely to increase to 40% by 2030, leads to fast development of infrastructure. This has further been supported by the attractive increase in the Per Capita Income. The Government of India has provided various measures, in terms of low entry barriers and Investment to boost up growth coupled with the setting up of the National Automobile testing and R&D infrastructure Project at various places.

The research paper will have its implications not only on the development aspects of Madhya Pradesh State but will also help the government in understanding the long term prospective of developing efficient infrastructural projects, viz road development traffic handling problem etc. Further it will also underscore the importance of understanding the practical problem through mathematical modeling.

CPM206. On Weakly Pseudo Projectively Symmetric Manifolds

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Abstract: The object of present paper is to study weakly pseudo-projectively symmetric manifolds and pseudo-projectively flat weakly Ricci-symmetric
manifolds.

CPM207. Saigo-Maeda Fractional Integrals and I-Function

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Abstract: In this paper, we derive the theorems based on I- Function introduced by Saxena involving Saigo-Maeda's fractional integrals. Some special cases are also discussed.

CPM208. Certain solutions of shock- waves in non- ideal gases

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Abstract: In present paper non-self similar solutions for plane, cylindrical and sherical unsteady flow of non ideal gas behind shock wave of arbitrary strengh initiated by instantaneous release of finite energy and propagating in a non ideal gas is investigated .Asymptotic analysis is applied to obtain a solution up to second order . For numerical solution Runga-Kutta method of fourth order is applied and variation of velocity ,pressure , density and explosion energy is investigated . For graphs origin 7.5 is used.

CPM209. FEM APPROACH FOR STEADY STATE TEMPERATURE DISTRIBUTION IN THE HUMAN EYE

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Abstract: Invasive methods, generally, are harmful in measuring human eye temperature; instead computational models can be used as an effective tool. Heat regulation in human eye is characterized by conduction, convection, radiation as well as blood perfusion, metabolism and evaporation. Although, blood circulation occurs only in retina, choroid, iris and cilliary body which constitutes a very small volume, it is still necessary to study the effects in order to obtain a more accurate model. Thus, in this work, effect of blood perfusion and metabolism is studied in human eye for temperature profiles using Pennes bioheat transfer equation in one dimension for different values of evaporation rates, blood temperatures, ambient temperatures and lens thermal conductivities. Results are shown in terms of temperature profiles along the pupillary axis. The temperature values so obtained are compared against those reported on the literatures.

CPM210. Bio-heat transfer Equations with Limitations, Shortcomings and Applicability

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Abstract: The determination of temperature distribution in blood perfused tissue of human body is important in many medical therapies and physiological studies. The key thermal modeling of blood perfused tissue is the formulation of appropriate heat transfer equation. Such an equation must take into consideration of three factors: (1) blood perfusion (2) the vascular architecture and (3) variation in thermal properties and blood flow rate. The search for heat equation modeling began over a half century ago and remains an active topic for current investigators. Over the years, many bioheat equations have been formulated. The paper presents a brief description of some of these equations and their limitations, shortcomings and applicability.

CPM211. Modified Bessel Equation in the solution of Bioheat Transfer Equation

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Abstract: The paper uses the Modified Bessel differential equation to obtain the solution of Pennes Bioheat equation for the temperature distribution in the human body at different environmental temperatures. The human body resembles cylinder in shape, so the study has been carried out in

cylindrical shape of human body in radial direction. The computer algebraic software Matlab has been used to exhibit the results graphically.

CPM212. Comparative Study of Temperature Distribution Model In Male And Female

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Abstract: Skin temperature distribution in human body is a complex interaction of physical heat exchange processes and the potential for physiological adjustment. The paper deals a comparative study of temperature distribution in Male and Female in the five layers of dermal part–Stratum Corneum, Stratum Germinativum, Papillary Region, Reticular Region and Subcutaneous Tissues taking into account of blood perfusion and metabolic effects. The loss of heat from the outer surface of the body to the environment is taken due to convection, radiation and sweat evaporation. The numerical simulation of the models is obtained using finite element method. The obtained results are exhibited graphically.

CPM213.Unsteady mixed convective heat and Mass transfer flow with first order chemical reaction and induced magnetic field.

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Abstract: The study of unsteady heat and mass transfer by mixed convection flow past an infinite vertical oscillating plate with heat generation has been made under the action of transverse magnetic field and first order chemical reaction. The vertical plate subjected to a constant suction velocity as well as uniform free stream velocity. The boundary layer equations have been transformed into dimensionless coupled Non-linear differential equations by appropriate transformation. The similarity solutions of the transformed dimensionless equations for flow field, induced magnetic field, current density, heat and mass transfer. Characteristic are obtained by series solution technique and their Numerical results are presented in the form of graph.

CPM214. A Simple Finite Elements Method for the Pricing of American Style Options.

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Abstract: As American Style Options can be exercised at any time before expiry, the valuation problem of American options is formulated as a free boundary value problem for which no analytical solutions

exist in general. As a result one has to rely on numerical method for the solution. In past three decades a lot of numerical methods including lattice methods, finite difference methods, simulation techniques, finite element methods etc. have been proposed but the search of robust and accurate numerical method for the solution of American options is still an active area of research. In this paper we use the variation finite element, element coupled with Bellmen's Principle of optimality for the solution of American options.

CPM215. Finite Element Model of Calcium Distribution Near an Open Calcium Channel in NRK Fibroblasts

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Abstract: Normal rat kidney fibroblasts cell have excitable properties under certain growth conditions and able to generate action potentials (AP). Experimental studies have shown that Calcium channels are responsible for generation of resting membrane potential. The present mathematical model has been developed to study the impact of calcium channel on calcium profile in cytosol of fibroblasts cell. This model assumes EBA (excess buffer approximation) incorporating important physiological parameters like L-type calcium channel, buffer binding affinity, calcium diffusion coefficient, total buffer concentration and source amplitude etc. Finite element method is used to obtain calcium concentration distribution in two dimension and numerical results has been discussed for various physiological parameters. A computer program has been developed in MATHLAB 7.11 for the entire problem.

CPM216. Inversion of an integral involving a product of general class of polynomials and Saxena's *I*-function as kernel

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Abstract: Solution for a certain convolution integral equation of Fredholm type whose kernel involves a product of general class of polynomials and Saxena's *I*-function has been obtained. The main result is believed to be general and unified in nature. A number of results follow as special cases by specializing the parameters of the general class of polynomials and *I*-function.

CPM217. Safety Factor Analysis in Homogeneous Thick Walled Circular Cylinder under External Pressure

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Abstract: Safety factor analysis has been done for thick-walled circular cylinder under external pressure using transition theory which is based on the concept of generalized principal strain measure that simplifies the constitutive equations by prescribing a priory the order of the measure of deformation and

helps to achieve better results. Results obtained is analyzed and discussed numerically as well as graphically.

CPM218. Elastic-plastic Transition of a Homogeneous Thick-walled Circular Cylinder under External pressure

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Abstract: Elastic-plastic stresses have been obtained for thick-walled circular cylinder under external pressure using transition theory which is based on the concept of generalized principal strain measure that simplifies the constitutive equations by prescribing a priory the order of the measure of deformation and helps to achieve better agreement between the theoretical and experimental results. Results obtained have been analyzed and discussed numerically as well as graphically. From our analysis, we can conclude that homogeneous circular cylinder with less compressibility is on the safer side of the design as compared to highly compressible circular cylinder because less compressible cylinder required high pressure for initial yielding as compared to high compressible cylinder which leads to the idea of 'Stress Saving' and minimizes the possibility of fracture.

CPM219. English verses based on ordered word structure from a mathematical point of view and palindrome poems.

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Abstract: By the application of a mathematical concept we have arranged words of different orders. This arrangement of words on the basis of different orders is quite different from that of a dictionary. By the order of a word we mean the number of letters a word comprises. With a view to keeping the mathematical idea that English is very much in close proximity with the concept ordered finite set and with the help of these ordered words, we have developed we have composed several verses of order 2,3,4,5 and 6 and other higher order.
The word palindrome is derived from the Greek palíndromos, meaning running backagain (palín = AGAIN + drom–, drameîn = RUN). A palindrome is a word or phrase which reads the same in both directions.

CPM220.A note on Maya calendar

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Abstract: The Maya people who converted the atrocity into art through mathematical calculations.
The Mayas were very stylish, cultured, organized in their life style. Mayas were more scientific than other group of people of that time. They were very religious. It was very interesting to note that the Mayas used

a pure vigesimal system for counting physical objects. But they used different counting system for counting days and estimating religious dates and other astronomical calculations.

CPM 221. FINITE CREEP DEFORMATION IN THICK-WALLED CIRCULAR CYLINDER WITH VARYING COMPRESSIBILITY UNDER EXTERNAL PRESSURE USING LEBESGUE MEASURE

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Abstract: Creep stresses have been obtained for thick-walled circular cylinder with varying compressibility under external pressure using transition theory and generalized principal strain measure which simplifies the constitutive equations by prescribing a priory the order of the measure of deformation. Results have been analyzed and discussed numerically as well as graphically. From the numerical results, it has been observed that non-homogenous cylinder with linear measure is better for design as compared to homogenous cylinder and non-homogenous cylinder with nonlinear measure.

CPM222. On Multiobjective Duality For Variational Problems

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Abstract: In this paper two types of duals are considered for a class of variational problems involving higher order derivatives. The duality results are derived without any use of optimality conditions. One set of results is based on Mond- Weir type dual that has the same objective functional as the primal problem but different constraints. The second set of results is based on a dual of an auxiliary primal with single objective function. Under various convexity and generalized convexity assumptions, duality relationships between primal and its various duals are established. Problems with natural boundary values are considered and the analogs of our results in nonlinear programming are also indicated.

CPM223. Analysis of a Computer System With priority to S/ W Replacement over H/W Repair Activities Subject to Replacement Time

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Abstract: This paper concentrates on the reliability modelling of a computer system in which h/w and s/w fail independently. Two- identical units of a computer system are taken in which one unit is initially operative and the other kept as cold standby. A single repair facility is provided immediately to the

system for conducting repair activities. The unit undergoes for inspection at its h/w failure to see the feasibility of repair. If repair of the h/w is not feasible, it is replaced by new one giving some replacement time. However, s/w is replaced by new one giving some replacement time in case it fails to execute the programs properly. The priority to s/w replacement is given over inspection and repair of the h/w. The distributions of h/w and s/w failure follow negative exponentially while that of replacement and repair times are taken as arbitrary with different probability density functions. The expressions for some important performance measures have been derived using semi- Markov process and regenerative point technique. The graphical behaviour of the results has also been observed for a particular case.

CPM224. AN OVERVIEW ON CRYPTOGRAPHY

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Abstract: Cryptography is the art of secret writing. More generally, people think of cryptography as the art of mangling information into apparent unintelligibility in a manner allowing a secret method of unmangling. The basic service provided by cryptography is the ability to send information between participants in a way that prevents others from reading it.

A message in its original form is known as **plaintext** or **cleartext** . The mangled information is known as **ciphertext** . The process for producing ciphertext from plaintext is known as **encryption** . The reverse of encryption is called **decryption.**

It is used for authentication and encryption (bank cards, wireless telephone, e-commerce, pay-TV), access control (car lock systems, ski lifts), payment (prepaid telephone cards, e-cash), and may become the fundamental instrument of democracy with the advent of e-voting systems.

CPIT 101.A 3-Tier Novel Security Scheme for Secret Data using Cryptography and Steganography

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Abstract: With the development of network techniques the problem of network security becomes more and more important. The use of Word Wide Web has grown extremely in the past few years. Furthermore, many end users can easily use tools to synthesize and edit multimedia information. Thus, security has become one of the most significant problems for distributing new information technology. It is necessary to protect this information while communicated over insecure channels. Thus, a need exists for developing technology that will help protect the integrity of digital content and secure the intellectual property rights of owners. Cryptography and Steganography are the two major techniques for secret communication. The contents of secret message are scrambled in cryptography, where as in steganography the secret message is embedded into the cover medium. In this proposed system we developed high security model by combining cryptographic and Steganographic security.

CPIT 102.A Brief Review on: Computer Network Routing using Neural Networks

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Abstract: Routing of packets in computer network holds mattering significance in itself. The whole performance of computer network is quietly depending on the routing. The computer network has a lot of dynamics, here dynamics referred to as the network topology, cost, reliability, bandwidth and lot more. Many researchers have tried to give their methods and algorithms to overcome the problem of routing. The problem of obtaining a shortest path between the nodes (considering minimal two nodes) may call as analysis of the network. Through this review we could knowledgeable with, how the neural network technique could be used to optimize the computer network routing. With help of neural network techniques the improvement in dynamics of computer network for routing could be achieved. The shortest path problem could be tackle out on finding a minimal cost path which has a destination and a source node. Neural network gives flexibility to such complicated problems due to its robust adapting nature.

CPIT 103.A Comparative Analysis of IEEE 802.15.4 & 802.15.4 for Wireless Personal Area Network

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Abstract: This paper introduces a performance model of a recently proposed Non-overlapping binary exponential backoff algorithm over IEEE 802.15.4, which is designed for Wireless Personal Area Network (LR-WPAN). This algorithm is suitable to reduce the collision rate in highly populated wireless networks, non-overlapping binary exponential backoff tries to evenly distribute the random backoff delay by distinguishing the new range of backoff delays. For the performance measurement of non-overlapping binary exponential backoff algorithm, obtained results are compared with the traditional model of IEEE 802.15.4. Our numerical analyses show that non-overlapping binary exponential backoff improves the throughput and transmission delay comparing to the traditional BEB.

CPIT 104.A Framework to Optimize Accuracy in Fuzzy Time Series Forecasting

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Abstract: Forecasting is the process of predicting the future of any event or events. Forecasting is very important problem associated with various fields like business industry, economics, medicine , finance etc. Various techniques have been proposed for forecasting based on fuzzy time series. The fuzzy time

series forecasting accuracy depends upon the size of data , chosen interval and algorithm. It is very difficult to select a proper interval and algorithm which gives better forecasted value. In this paper we propose a framework design , which provides us the algorithm and interval which has the smallest Mean Square Error (MSE) for a given data set using Fuzzy Time Series.

Keywords: Forecasting, Fuzzy Time Series, Mean Square Error .

CPIT 105.A Karnaugh Map Model for Temporal Association Rules Mining

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Abstract: Mining of association rules is an important component of data mining. In real world data the knowledge used for mining is almost time variant. It is also important that in database, some items which are infrequent with respect to the whole dataset but that may be frequent in a particular time stamp. If such items are ignored then generated association rules are no longer accurate. To restrict the time based association rules, a calendar unit such as days, months, quarters, halves, year and specialized units, such as business periods and academic years plays a major role in a wide range of information system applications. This paper proposes an innovative approach for mining temporal association rules using Karnaugh map. A Karnaugh map model has been developed, which compress the database in the form of frequency of items, those are mapped into Karnaugh map matrices according to the time stamped partitions of dataset. As the Karnaugh Map matrices are very small in size, the mining process is carried on the Karnaugh Map matrix. Thus the whole database will be scanned only once. Thus this approach brings efficiency in association rule mining

CPIT 106.A Novel Approach of Dual Tree Discrete Wavelet Transform (DTDWT) for Image Compression and De-noisi

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Abstract: With the growth of multimedia technology over the past decades, the demand for digital information increases dramatically. Reduction in the size of the image data for both storing and transmission of digital images are becoming increasingly important as they find more applications. Image compression is a mapping from a higher dimensional space to a lower dimensional space. Image compression plays an important role in many multimedia applications, such as image storage and transmission. The basic goal of image compression is to represent an image with minimum number of bits of an acceptable image quality. The aim of this paper is to examine a set of wavelet functions (wavelets) for implementation in a still image compression system and to highlight the benefit of this transform relating to today's methods. The paper discusses important features of wavelet transform in compression of still images, including the extent to which the quality of image is degraded by the process of wavelet compression and decompression. Image quality is measured objectively, using peak signal-to-noise ratio or picture quality scale, and subjectively, using perceived image quality. Besides the image compression this paper also describes the importance and usefulness of Dual Tree Discrete wavelet transform

(DTDWT) for image de-noising. The results of image compression and image de-noising are simulated in matlab-R2010a environment for high value of PSNR and improved image quality of de-noised image.

CPIT 107.A optimal approach to allocate resources in Grid Computing

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Abstract: Grid computing is an important approach to distributed computing. A Grid is a decentralized heterogeneous system where resources belong to multiple organizations/individuals. The Grid environment is largely used for large-scale data processing, including applications of scientific ones. On a conventional network, the processing of a job on a takes place on a single computer, whereas in Grid the processing may be split between several computers. Thus, a Grid is, capable of running jobs that are too demanding for a conventional network. For a good processing performance the resources in a Grid need to be managed properly and effectively. Grid resources are geographically distributed and heterogeneous in nature. Owing to this, availability of resources is complicated in the environment. Also, a single application may request different resource distributed over a network making allocation more complex. Allocating resources in the Grid environment is regarded as a vital component of a Grid infrastructure. Many authors have proposed various methods have been for the same. In this paper, we propose a new Grid resource allocation method that tries to assign jobs to processor in a way that is close to the optimum. In this paper we propose a novel approach for Grid resource allocation scenario. This paper also includes a comparative performance analysis of our proposed Resource Allocation method with the existing ones.

CPIT 108.A pictorial method of Visualizing Curl & Determinant operation used to represent rotation of a vector in Electromagnetics

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Abstract: Curl and Determinant operations are well known in the field of Electromagnetics and fluid dynamics. Famous Maxwell's equations involve curl operation. Though this operation is widely used to represent rotation, we do not have sufficient literature explaining how this operation represents rotation. Most of the books omit detailed discussion on the physical interpretation of the CURL and Determinant operation. In this paper we have attempted to develop a pictorial method to provide a logical proof showing the versatility of this operation to study the rotating vectors.

CPIT 109.A Review: Natural Language Interface to Database

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Abstract: In the world of computing, information plays an important role in our lives. One of the major sources of information is database. Database and Database technology are having major impact on the growing use of computers. Almost all IT applications are storing and retrieving the information or data from the database. Database Management Systems (DBMS) have been widely used for storing and retrieving data. However, databases are often hard to use since their interface is quite rigid in co-operating with users. For storing and retrieving the information from database requires the knowledge of database language like SQL. Structured Query Language (SQL) is an ANSI standard for accessing and manipulating the information stored in database. However, everyone may not be able to write the SQL query as they may not be aware of the syntax and structure of SQL and database respectively. The purpose of Natural Language Interface is to allow users to compose questions in Natural Language and receive the response also in Natural Language. The idea of using Natural Language instead of SQL has promoted the development of new type of processing called Natural Language Interface to Database(NLIDB). This paper discuss about an introduction of Intelligent Database System, Natural Language Processing and Natural Language Interface to Database. It also gives a brief overview of subcomponent of NLIDB, techniques used to development of NLIDB along with its architecture.

CPIT 110.A Review of Different Selection Procedures for Additive Manufacturing Techniques

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Abstract: Additive Manufacturing (AM) refers to the technologies that use Computer Aided Design (CAD) data to produce plastic, metal, ceramic, paper, wax or composite material parts by adding material layer by layer. Since last two decades, AM has evolved as a promising solution for freeform fabrication. Consequently, several AM techniques have been developed to make physical model from CAD data, to support applications in various fields such as new product development, aerospace, automobile, civil and construction, jewellery, medical, electronics etc. AM community have been facing challenges in selecting a suitable technique for manufacturing parts out of large number of AM techniques available worldwide. Several researchers have developed algorithms for selecting a proper technique to manufacture part by AM. This paper presents a review of different selection procedures for AM developed by various researchers. These selection procedures have been critically analysed based on their applicability to the different parts produced on AM machine and usefulness in today's market. The decision making algorithm of these selection procedures have also been discussed in this review paper.

CPIT 111.A Review of Frequency Domain Filtering for Restoring Noisy Images

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Abstract: Image restoration is the operation of taking a degraded (corrupted) image and estimating the clean original image. Restoration attempts to reconstruct or recover an image that has been degraded by using a priori knowledge of the degradation phenomenon. Degradation in an image may come in many forms such as motion blur, noise, and camera misfocus. This paper provides review of some frequency domain filters for restoring noisy images. This paper starts with presenting basic degradation/restoration process and gradually proceeds to give a listing of various frequency domain filters according to type of noise to be deal with. Results from analytical study present viewable comparison among all the frequency domain filters reviewed in this paper.

CPIT 112.A review of modern technique for identifying soya crop disease

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Abstract: Agricultural sector, the most important one, irrespective of nation, or geographical location is affected in terms of production and yield due to several plant foliar diseases worldwide and causing 0-90% of contribution in gross yield losses. Almost all types of crops are affected by such foliar diseases. Due to lack of knowledge farmers are unable to identify the disease and life cycle of disease. Many factors are responsible for developing the life cycle of the disease, like temperature, humidity, rainfall, soil fertilizers, etc. whereas the early information about disease, facilitates the control of disease in crops. The present review recognized the need for reliable, cost effective and rapid action technique that would facilitate to the agriculture sector. This paper describes the currently used technologies primarily related to soybean, which can be used for developing a ground based sensor system to identify and monitoring the disease under the field conditions. These technologies include spectroscopic, thermo graphic, hyper spectral imaging, remote sensing and geographical information system for crop disease detection.

CPIT 113.A review of modern techniques in GIS using digital image processing

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Abstract: Remote sensing and image processing needs to be change into tangible data which can be utilised in affiliation with other data sets, often within widely used Geographic Information Systems (GIS). GIS and image processing started to grow together rapidly through object based image analysis. Now a days different types of image processing method use in GIS. The automated extraction of linear features from remotely sensed imagery has been the subject of extensive research over several decades. Recent studies show promise for extraction of feature information for applications such as updating geographic information systems (GIS). Research has been stimulated by the increase in available imagery in recent year. However, while the expansion in the range and availability of image data provides new possibilities for deriving image related products, it also places new demands on image processing. This study provides an overview of the types of imagery being used for GIS, feature extraction and object based image analysis for remote sensing techniques.

CPIT 114.A Review on the Role of Knowledge Management in Business

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Abstract: Knowledge Management System (KMS) is a combination of database and information technology. KMS gives the information and various techniques for knowledge representation using

pictures, videos, sounds, logical formulation, text and networks. The concept of Knowledge management comes from the human knowledge that has to be preserved and leveraged; because human knowledge has no end. He always learns something from different environment. In our study, we made the efforts to show the current applications of Knowledge management, because any organisation before taking any action we primarily focus on knowledge and information. It is a big help for future planning because by just analysing the knowledge flow we can reduce the risk. For making a good knowledge management system we can use the past experiences of the employees and different methodology and expert advice. These three pillars can help an organisation to stand up in competitive environment.

CPIT 115.A Robust Secured Mechanism for Mobile IPv6 Threats

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Abstract: Mobile IPv6 has been developed to enable mobility in IP network for mobile terminals. MIPv6 have a lot of feature in comparison to previous Mobile IP protocol . From the data security perspective, the basic objective during the development of Mobile IPv6 has been that it must be at least as secure as previous Mobile IP protocol and it should not introduce any new security threats. But it suffers from various security threats like Eavesdropping, Secure route optimization, connection hijacking and denial of services. and security issues are one of the primary considerations that need to be address. In this paper we proposed a mechanism which includes all security components like Authentication, confidentiality and integrity, secretes key management. It will reduce all security threats and enhance security of Mobile IPv6.

CPIT 116.A Survey of Graph Pattern Matching Techniques

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Abstract: Work on pattern matching in graphs spans a diverse range of research in computer science. Because of it's widely applications, it is a very active area with intensive researches for many years. It is based on graph or sub graph isomorphism. Graph pattern matching problem is highly used in computer vision, knowledge discovery, dynamic network traffic, social networks and intelligence analysis, web modeling, (Geographic Information System) and Computational biology. It has been successfully applied in computer vision for the recognition of 3-D objects.

There are two variations of this problem. The first one is to detect graph/subgraph isomorphism between two unknown graphs. The graph in which we are searching for the isomorphic image is called the target graph and the isomorphic image which we are looking for is called pattern. The other one is to detect graph/subgraph isomorphism from an input graph to a database of model graphs. There is often a database of graphs, so-called model graphs, and a single input graph that must be tested.

There are so many algorithms that are already developed for the graph pattern matching problem. Some existing algorithm related to this problem is Adaptive, Incremental, Recursive and Spectral. The existing solutions to this problem are compared and analysed in this paper. First section contains the problem definition in detail. Next section includes some algorithms related to first kind of problem and

comparative analysis on the basis of time complexity and space complexity. In last section we discussed the algorithm related to the database of model graph.

CPIT 117.A SURVEY OF ROI IMAGE RETRIEVAL TECHNIQUES

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Abstract: Content based image retrieval involves extraction of global and region features of images for their effective indexing and retrieval from large image databases. Region based feature have shown to be more effective than global features as they are capable of reflecting users specific interest with greater accuracy. However success of region based methods largely depends on the segmentation technique used to automatically specify the region of interest (ROI) in the query. Apart from this user can also specify ROI's in an image. The ROI image retrieval involves formulation of region based query, feature extraction, indexing and retrieval of images containing similar region as specified in the query. In this paper state of the art techniques for ROI image retrieval are discussed. Comparative study of each of these techniques together with pros and cons of each technique are listed. The paper is concluded with our views on challenges faced by researchers and further scope of research in the area.

CPIT 118.A survey on geographic routing protocols for dynamic hole-bypassing in wireless multimedia sensor network

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Abstract: Due to the availability of inexpensive hardware's such as Microphones, audio, video and image recorders the wireless multimedia sensor networks (WMSN) became the most popular networks in sensing multimedia data. However the quality of service (QOS) requirement is still the new challenge in routing. Reliably and efficiently transmitting the multimedia streaming data is also the most important challenge for the WMSN because multimedia data should be in a continuous stream. Even though the different kinds of holes can easily appear in the multimedia sensor networks field due to different reasons. So the routing protocols which support the dynamic hole bypassing will use different methods to overcome these holes. In this paper the author will survey all the geographic routing protocols which support dynamic hole bypassing in wireless multimedia sensor networks. All the possible protocols from theinitial stage have been surveyed and their properties and drawbacks have been compared. In WMSN, dynamic holes may occur at a high frequency. To overcome holes, routing may choose alternate path that is not optimal, which in turn can cause extra delay.
More explorations are required to adapt to topology changes caused by holes. The most popular used protocols are GPSR, TPGF, and GEAMS etc.

CPIT 119.A Survey on Software Reuse: Relating the Reusability with other concepts in Software Engineering

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Abstract: Software reuse can be defined as all activity that has using previously written software (in the form of specification,design, code and/or Related documentation) as its goal. This paper presents a study of the important factors behind the concept of software reuse; these are increased productivity and increased software quality. Based on studies of eusability, the component based development leads up to 70 percent reduction in cycle time and up to 84 percent reduction in project cost, and productivity index of 26. Reusability brings several additional aspects to software development that does not need to be considered when reusability is not required. Reuse libraries are directed towards facilitating software life cycle component reuse to meet cost effectiveness and productivity goal. There are vast amount of methodologies and literature and ongoing research in these areas, there are still some fields to be explored. Four fields, that is, Software architecture, re engineering, Software life cycle, and component based software engineering are discussed in this paper. Benefits and challenges in this field are generalized and summarized in this paper in order to have a whole picture of the state of the art of software reuse.

CPIT 120.A Review on Optical and Biological Possibilities in Data Storage

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Abstract: Biological and Optical data storage offers an entirely new way of looking at data storage technology. Optical data storage requires metal for data storage but Biological storage never requires metal instead it uses bacteria. Actually these two techniques work on natural resource (light for Optical and bacteria for Biological). From users point of view these are provide vast amount of data storage. From security point of view Biological data storage facilities others never hack your data because bacteria are immune from cyber attacks. From technology point of view these are shifting storage technology into a new era of storage. It seems to be suited the problem of large amount of data storage in cloud computing, data centers and data warehouses. Biological data storage also establishes a bridge between molecular world and digital world.

CPIT 121.A survey on Digital Watermarking based on Singular Value Decomposition and Wavelet Transform

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Abstract: Rapid progression of Internet technology and related services has enhanced the simplicity of access to digital information through web, leading to the problem of associated copyright to be confined.

The problem of rightful ownership has direct to giving the digital watermarking as an evident solution. Now a day's Digital Watermarking has perceived a keen interest by research community in the area of information security. Digital watermarking and its associated techniques are widely used for copyright protection; broadcast monitoring, fingerprinting, data hiding and information authentication. In this paper we have demonstrated the recent survey in the area of wavelet and singular value domain watermarking. The classification of various topical watermarking techniques is characterized through tabular representations.

CPIT 122.ACCELERATED Q-LEARNING APPROACH FOR MINUTIAE EXTRACTION FROM FINGERPRINT

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Abstract: Reinforcement Learning has received much interest in biometric authentication process due the robustness against noise. Fingerprint identification is widely used biometric characteristics. Accuracy Identified by fingerprint biometric is very high due to the individuality and durability. The primary goal of this paper is to explore Accelerated Q-learning approach for minutiae extraction from the fingerprint images. Conventional approaches for Minutiae extraction are enormously unreliable in the case of poor quality fingerprint images due to the involvement of image processing steps. A novel Accelerated Q-learning approach which is insensitive to the policy of exploration has been explored to deal with the problem of convergence speed. Agents learns by calculating Q value for both goal and fail state on the basis of relation between neighborhood gray scale values of ridges and finds original minutiae by selecting maximum Q values of goal state.

CPIT 123.Adoption of Open Source Software (OSS) over Proprietary Software in Government

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Abstract: This paper explores the compare and contrast between Open source software (OSS) with from various aspects of paradigm and emphasis on adaptation by the government. Proprietary software and suggest Open source software (OSS) is computer software that has its underlying 'source-code' made available under a licence.This can allow developers and users to adapt and improve it. Policy on the use of OSS in government was updated in 2004.Open source first evolved during the 1970s. Richard Stallman, an American software developer who believes that sharing source-code and ideas is fundamental to freedom of speech, developed a 'free' version of the widely used 'Unix' Operating system. The resulting 'GNU' program was released under a specially created General Public License ('GNU GPL').This was designed to ensure that the source-code would remain openly available to all. It was not intended to prevent commercial usage or distribution. This approach was christened 'free software'. In this context 'free' meant that was often misunderstood to mean 'no cost'. Hence 'open source software' was coined as a less contentious and more 'business-friendly' term.

CPIT 124.An approach of Data Mining towards the Health Care Applications

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Abstract: Data mining is the process of analyzing data from different perspective and summarizing it into useful information that can be used to increase revenue, cuts costs, or both. Data mining tools are used as the number of analytical tools for analyzing data. It allows users to analyze data from many different dimensions or angels, categorize it, and summarize the relationships identified. Technically Data mining is the process of finding correlations or patterns among dozens of fields in large relational databases. In today's time data mining is a curious field of the research due to the huge amount of data and problems facing with pattern recognition. The objective of this is, to acquire knowledge from the pool of data. In the areas of medical science, there are regulations and avalibility of computers, a data pool is becoming available. On other side doctors expect to use all this data in their work, but a large amount of data cannot be processed so they cannot diagnose, bode and treatment schedules. In this study we have shown the data mining tools in medical science and health care applications that can help us to make accurate decisions.

CPIT 125.An Efficient Approach for high utility itemset Mining of Incremental Data

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Abstract: High utility pattern mining becomes a very important research issue in data mining by considering the non-binary frequency values of items in transactions and different profit values for each item. In real-world applications, new transactions are usually inserted into databases. It is undesirable to mine patterns from scratch each time when some new itemsets are added into the database. There should be a scheme to mine high utility itemsets which can be adapted to incremental database updates. This research proposes a novel approach to mine complete set of high utility item sets from incremental databases. This will involve in dynamic of data that is, with time running and effectively deal with the data set including new data and the old data which may be important for theoretical analysis and practical application. This will generate some most profitable and high priced patterns of real world dynamic data.

CPIT 126.An Efficient Approach for Incremental Association Rule mining through Histogram matching Technique

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Abstract :The objective of work being presented through this paper is to propose an approach for obtaining appropriate association rules when data set is being incrementally updated. During this process raw data will be clustered by K-mean Clustering Algorithm and appropriate rules will be generated for each cluster. Further a histogram and probability density function will also be generated for each cluster. When Burst data set are coming to the system, initially the histogram and probability density function of this new data set will be obtained. New data set has to be added to the cluster whose histogram and probability density functions are almost similar. The proposed method is evaluated and explained on synthetic data.
Keywords: Association rule mining; K-means clustering; histogram; Skewness; Kurtosis.

CPIT 127.An Efficient Deadlock Resolution Method for Distributed Transactions

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Abstract: The occurrence of deadlocks can be controlled using detection and resolution methods, but may sometimes lead to a serious system failure. A deadlock cripples either the entire or partial system by blocking its process to continue ahead. The utilization of the involved processes resources to zero. Moreover if deadlock is not resolved timely then the size of the deadlock may increase with time as more and more processes trap into it. Although after applying an efficient deadlock detection algorithm the deadlock is resolved by a deadlock resolution algorithm whose primary step is to either select the victim then to abort the victim transaction or cause it to rollback, this step resolves deadlock but is not efficient one as it causes a process to abort or rollback which means all the work done by the processes gets wasted. Therefore this paper proposes an improved deadlock resolution algorithm for distributed transactions which doesn't cause any aborts /roll backs in fact it is based on the mutual cooperation of transactions and a random number representing time duration for which the process holding the resource will be suspended. The advantages of the proposed algorithm are: 1) It doesn't cause any rollbacks/aborts 2) resolution method is simple to implement. 3) This algorithm when applied to processes involved in deadlock in various sites it acts as distributed and when applied to transactions involved in deadlock in one site acts as centralized algorithm.

CPIT 128.An Efficient Method For Extracting Frequent Pattern Using Transposition of Database

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Abstract: Apriori is a classical algorithm for frequent patterns extraction. Apriori is designed to operate on databases containing transactions. The purpose of the Apriori Algorithm is to find frequent itemsets between different transaction sets of data. The aim of this research is to improve the performance of the conventional Apriori algorithm that extracts frequent patterns for binary transaction dataset. An approach implemented in Transposed database then result is very fast. Recently, different works proposed a new

way to mine frequent patterns in transposed databases where a database with thousands of attributes but only tens of objects. In this case, mining the transposed database runs through a smaller search space. This work systematically explores the search space of frequent patterns mining and represent database in transposed form. This paper proposed an algorithm for mining frequent patterns which are based on Apriori algorithm and used space reduced longest common sequence (LCS) which makes apriori algorithm space efficient. Space complexity for Proposed algorithm is O(n) while the Dynamic Approach like Longest Common Subsequence space complexity is $O(n^2)$ memory for given items in dataset.

Keywords: LCS, Apriori algorithm, Frequent itemset, Data mining, Space complexity, transposition of database.

CPIT 129.An Efficient Method of Risk Assessment using Intelligent Agents

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Abstract: Risk assessment is one of the most important tasks in software development. It can absorb a significant amount of project planning effort. Some tools like CASE (Computer-aided Software Engineering) tools support particular phases of the project cycle while others can be used with a specific software development model or technology. There is a need for risk assessment and management since risk management is done throughout the lifecycle of a project. In this paper, the risk assessment problem is addressed using one of the effective methods known as Intelligent agents' method.

CPIT 130.An Improved Reversible Method for Conversion of Color to Textured Grey Formation Technique

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Abstract: In this paper, we are proposing a method for the conversion of color graphics and picture to monochrome, in which the performance of color to textured gray conversion is improved. In this method the color information is mapped with the high-frequency component which is less perceptible to human eye. And the textured image after reception can be decoded and identification of texture can be done and color information can be recovered. This method is based on sub-band decomposition of an image using wavelet transform and embedding the color information to it. And low pass channel is left intact. It can be used for printing also.

CPIT 131.An integrated cloud based approach to e-Governance

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Abstract: In the current scenario every where a new trend to implement Cloud Computing in traditional IT applications is taking its position. Cloud computing can permits to uniformly cover the whole country with e-governance solutions, independently of divergence of local administrative units that may be better or worse prepared to provide e-Governance services. Service-oriented architecture facilitates provision of compound services covering whole customer processes, where a customer may be a citizen or an government enterprise. In this paper, we analyze cloud computing and examines its application in the context of e-Governance .Further In this paper, our endeavor is to highlight and bring out some new dimensions in the area of e-Governance where cloud computing may be utilized.

CPIT 132.Analysing the delay in Border Gateway Protocol

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Abstract: To address the problem of long convergence delay in Border Gateway Routing Protocol, many authors have proposed different methods of reducing the long convergence time of the protocol. In our work, we have critically analyzed the given methods and techniques which address the aforementioned problem in Border Gateway Routing Protocol. Our work shows the limitations of each of the pre-existing approach to give area of further improvements to obtain the best possible solution.

CPIT 133.Analysis and Implementation of Intrusion Detection using Wireless Networks

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Abstract: A number of neighbor-monitoring, trust-building, and cluster-based voting schemes have been proposed in the research to enable the detection and reporting of malicious activity in ad hoc networks. The resources consumed by ad hoc network member nodes to monitor, detect, report, and diagnose malicious activity, however, may be greater than simply rerouting packets through a different available path. In this paper we present a method for determining conditions under which critical nodes should be monitored, describes the details of a critical node test Simulation, presents experimental results, and offers a new approach for conserving the limited resources of an ad hoc network IDS.

CPIT 134.Analysis Design and Implementation of Secured framework for cloud computing

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Abstract: Cloud computing is the latest computing technique which brings revolving change in computing environment. Security is the major concern in cloud computing because it is open system service. In this research different research projects of cloud computing are analysed and identifies some problems of data security, code security, information security and some network level security which are in existing cloud model.

This research provides proposed framework to resolve analysed security issues like data, code, information and network. This framework also provide encryption scheme to secure data and data correctness facility while storing data. Proposed framework provides the solution of the analysed security problems by adding security framework between cloud provider and internet.

CPIT 135.ANALYSIS OF MULTI-PATH FADING CHANNELS FOR SUITABILITY OF DATA TRANSMISSION

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Abstract: The characterization and modeling of the fading channel are essential to wireless communication design. In this paper, we design a fuzzy-based approach for performing the quality estimation of multi-path fading channels. We have used Rayleigh distribution to create the wireless channel. In addition, certain attributes of the channel (bit error rate, energy, and distance between sender and receiver nodes) are fuzzified with the help of ANFIS (Sugeno) method to determine the channel quality. We have also carried out analysis of five Rayleigh channels having different characteristics. On the basis of its resultant outcome, we have further presented the suitability of the corresponding channels to voice, video and text transmission.

CPIT 136.Analysis of Ready Queue Processing Time under PPS-LS and RS-PPS-LS Scheme in Multiprocessing Environment

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Abstract: In operating system, process sequencing is an open problem and solved by many scientists/authors suggesting different scheduling schemes. Every process needs a time span to be processed by the CPU. Lottery scheduling is one such scheme where the process selection is purely on random basis. The ready queue is used for processes to wait there until selected for processor. This paper considers the environment of many processors, a ready queue, lottery scheduling and presents an efficient method to predict about total time needed to process the entire ready queue if only few are processed in a specified time. Confidence internals are calculated based on Probability Proportional to Size Lottery Scheduling (PPS-LS) and compared with Randomized Systematic PPS Lottery Scheduling (RS-PPS-LS). The RS- PPS-LS found better over PPS-LS.

CPIT 137.Analysis of the impact of BGP route oscillations
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Abstract: Route flap damping (RFD) is a method used in Border Gateway Protocol (BGP) to avoid persistent routing oscillations in the Internet. It is a mechanism used in BGP to control the frequency of route updates caused by possible huge changes in the network routing state. The fact that a route oscillates between being available and unavailable is known as route flapping. A typical example of a route flap is that a route is first advertised, then withdrawn, and then re-advertised. By suppressing routes that persistently flap and stopping them from being further advertised, the route flap damping mechanism aims to reduce the number of BGP update messages sent within the network and to decrease the processing load imposed on BGP speakers. In this paper, we analyze and compare several Route Flap Damping Algorithms with Dynamic MRAI Timer. We have used NS-2 to simulate and analyzed simulation results.

CPIT 138.ANALYSIS OF VARIOUS WEATHER FOERCASTING TECHNIQUES BASED UPON THE FACTORS AFFECTING THE WEATHER CONDITIONS

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Abstract: Weather forecasting is the application of science and technology to predict the state of the atmosphere for a future time and a given location. In this paper we compared and analyzed different weather monitoring and forecasting techniques by which we can draw the self organizing maps according to the various environment parameters .The various weather forecasting models based upon certain parameters such as temperature, air pressure, wind speed etc. All these parameters have their weightage to find out weather forecasting.

CPIT 139.APPLIANCES OF ARTIFICIAL INTELLIGENCE ANTI-VIRUS DETECTION SYSTEM

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Abstract: Artificial Intelligence has a considerable part in anti-virus detection technique. These days there have been a lot of proposals for the applications of AI in anti-virus detection techniques. The proposal also includes principle like Heuristic technique, Data mining and Artificial Neural Network. It is assumed that these principles will enhanced the efficiency of Anti-virus detection system up to a large extend as well as make ways for the invention of new artificial intelligence algorithm and arithmetic's and also resulting in the integration of Artificial Intelligence with the anti-virus system. This paper throws light on the major technologies in the field of AI in context with anti-virus detection system and also tells that on combining the technologies of AI will prove to be the major development trend in the area of anti-virus system.

CPIT 140.Applications of Data Mining Techniques for Social Computing

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Abstract: Social Computing focuses on various information and communication technologies that consider human social context. Data Mining techniques can be extremely well suited to the various research issues associated with social computing. In this paper, we want to provide a platform to the students, researchers, and professionals from all over the globe, for sharing research results and exchanging ideas about the applications of Data Mining techniques to facilitate the study of social systems and human social dynamics.

CPIT 141.Approach for Generating Smaller Test Suite for Killing of Same and Different Location Mutants

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Abstract: Mutation testing is the White-box, fault -based testing technique for Unit testing. For mutation testing we generate test data according to one mutant at one time, so for killing all the mutants large size of test suite required. In this paper, we propose a new approach to generate one test data according to multiple mutants that are mutated at the same location or mutated at different locations and this test data can kill multiple mutants at one time. The proposed approach will combine the necessity conditions of some same-location mutants and different-location mutants into one necessity condition and generate one test data to satisfy the shared reach ability conditions and the combined necessity condition for killing the multiple mutants. In our proposed approach we find the lesser number of test data inputs than all the test data inputs which are used to kill all same location mutants by acquiring , combining, reusing , minimizing and defining the range of all the test data inputs used to kill same-location or different-location mutants. The proposed approach implements the Mothra mutation operator for generating the mutants.

Our proposed approach generates smaller test suite of very less cost that can achieve the same mutation testing score.

CPIT 142. Artificial Bee Colony Algorithm with Real Coded Crossover and Its application

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Abstract: Artificial Bee Colony algorithm is a very effective optimization technique for continuous optimization problem. An Enhanced Artificial Bee colony Algorithm is proposed in this project work. Here we present ABC with different types of real coded crossover operators. ABC with different real coded crossover applied to the four benchmark functions. The experimental result shows that ABC with

different crossover operators may perform better than the ABC without crossover in terms of efficiency and accuracy. This enhanced ABC is applied to Travelling Salesman Problem.

A hybrid approach is also proposed in this work by integrating ABC and GA algorithm in Series Form. To check the efficiency of proposed work, it is applied to 4 benchmark functions for different dimensions. Numerical results show that the proposed hybrid method possesses better ability to find the global optimum than that of the standard GA algorithm. It is effective, and the precision could be improved.

CPIT 143. Biometrics in the Terms of Fingerprints detects all the Noisy Points from Image Use Matlab

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Abstract: Biometrics is automatic methods for identifying a person. Many biological characteristics, such as fingerprints, and behavioral characteristics, such as voice patterns, are distinctive to each person. Therefore, biometrics is more reliable and more capable. Some time the fingerprints are very faint we are also try to see the fingerprint directly with better accuracy use of multi mode Biometric System. The totally fingerprint is hugely recognized by the software with using Matlab and identification and verification the fingerprint.

CPIT 144.BRAIN COMPUTER INTERFACE

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Abstract: The paper basically deals with the study of BCI (Brain computer interface) Technology that can be used for capturing brain signals and translating them into commands that allow humans to control (just by thinking) devices such as computers, robots, rehabilitation technology and virtual reality environments. The BCI is based as a direct communication pathway between the brain and an external device. BCIs are often aimed at assisting, augmenting, or repairing human cognitive or sensory-motor functions.

The paper also deals with many advantages of BCI Technology along with some of its applications and some major drawbacks.

Index Terms- Brain–computer interfaces (BCI), Magnetic Resonance Image (MRI), Electroencephalography (EEG), Brain Machine Interface (BMI)

CPIT 145.Cellular Automata a New Concept: A Study work

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Abstract: A cellular automaton useful model for the complex behavior of systems. CA Model represents a certain characteristics to many real world applications. This paper describes CA models adopted in a variety of ways includes size of cell and direction for evaluation, which is cell variable clustering. A CA defined as a dynamical system that consists of infinite grid cells. Each cell represents an automata and neighborhood Cells has an index state of cell at a time in given grid or lattice or space with certain rules .The rule table for updating the cells state and vice- versa boundary conditions for CA which defined by limiting the space to finite, unbounded topology: a circle for one dimensional CA, torus for two-Dimensional CA and hyper-torsi for higher dimension. The CA concept has been researched in hardware as well as in software and defined as a discrete dynamical system with infinite grid of cells. A CA mathematically described as a quadruple comprising a d-dimensional cellular space C, an m-value state space S, an n-cell neighborhood N, and a cell-state transition function. The cells in C typically form a regular, usually orthogonal, lattice, although 2-D hexagonal lattices are also encountered. Recently, irregular grid structures have been also used to connect cells. The cells have states normally represented by the numbers .The neighborhood N of a cell consists of n cells, which are usually spatially close to the cell; sometimes, the cell itself is included in this neighborhood. The cell-state transition function f determines the state of a cell at the next time step according to the current states of the cells in its neighborhood. All cells change states synchronously at each time step, and the cell states evolve the same function f at each time step. A cellular Automata has three properties; Dimension, States per cell and Radius. Cellular automata has dynamic property applicable to different and diverse technology dimensions[1]Classical theory given by Von Neumann CA has self –reproducing biological tools with twenty nine states and five cell neighborhood. In other words CA is a Universal computer and a Universal Constructor for construction of another machine or Meta machine[3].the cellular automata classified in three categories i.e. a) classical)games and c) Modern.

First and eminent CA example is general CA, it was introduces in mathematical games. it is a two dimensional CA with two states and an update rule, it works on 2:3 cells updations. If two neighboring cells are black no change in state, otherwise state change this analogized to live and dead cell neighborhood, in other words rule update according to more than two or overcrowded theory. The game of life is most interesting in finding stable and non movable structures or life forms. The game of life is subject to research include the proof that game of life is a universal computer. The most research has done by wolfram in 'A new Kind of Science' [6].Wolfram's study shows very different and dynamical behavior of simple CA and Also given classification in four ways simple, complex and chaotic behavior. The qualitative nature of these definition leads to classification with fuzzy boundaries. Some CA especially more complex CA with larger neighborhood. The improved the wolframs classification which is limiting configuration is the final state or cycle states the classification simple CA as Null, fixed point two cycle periodic ,complex and chaotic. The four classes presented by wolfram, check undecidability and fuzziness based on elementary group, elementary rule and totalistic groups and totalistic rules, which can be modified to mutually exclusively.

CPIT 146.Challenges and Opportunities of Cloud Computing in India: A Study

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Abstract: Cloud computing is the recent trend in IT. It operates from the idea that work done on the client side can be moved to some unseen cluster of resources on the Internet. Cloud Computing comes into existence from last few years, but in India the concept is fairly new. With the development of the concept of cloud computing, more and more big international IT enterprises begin to apply it to grasp first chances. At the same time, medium-sized and small enterprises also want to obtain more advantages by virtue of cloud computing. However in India, there are a lot of problem to be faced. The major problem is that cloud computing in India is still not trusted and India is still not ready for cloud computing. We have no cloud computing policy of India. The another reasons for this situation is absence of legal framework for cloud computing in India, missing privacy laws, absence of data protection laws in India, inadequate data security in India, etc. Even the basic level cloud computing regulations in India are missing. This paper has taken up these kinds of challenges that India is facing. Next it will also cover the security and insecurity, the convenience and network speed, the applicability, the data sharing and reliability of cloud computing, which could help enterprises to more reasonably select and apply the cloud computing.

CPIT 147.Clock Synchronization using Heuristic Approach

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Abstract: In distributed network clock synchronization is essential to maintain the consistency in network. When we talk about the system clock then a picture of hardware related changes comes into mind which increases the difficulty level. Whereas software approach is easy to maintain and apply Also it reduces the cost and increases flexibility. We have provided, a software method for clock synchronization using heuristic approach IDA*(Iterative Deepening Algorithm) and determine the maximal delay under various constraints put on the network, like congestion, number of nodes, physical location etc. And also analyze the accuracy of this approach

CPIT 148.Cloud based Telemedicine syetem for rural health

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Abstract: Telemedicine involves the provision of health care and sharing of medical knowledge using telecommunications technologies. Preventive, diagnostic, and therapeutic services, as well as patient education and assistance with self-management of health, can be provided via telemedicine. The Veterans Health Administration (VHA) has a wide range of telemedicine

capabilities. Given studying its effectiveness, telemedicine is often applied to new patient populations without explicit evaluation of efficacy. Evaluating the potential use of telemedicine services through supporting literature from other disorders may be possible. Telemedicine Program is an innovative process of synergizing benefits of Satellite communication technology and information technology with Biomedical Engineering and Medical Sciences to deliver the health care services to the remote, distant and under served regions of the country. Providing healthcare to India's over one billion population of which about 75 percent live in villages, is a formidable task. About 75 percent of the doctors practice in urban areas and 23 percent in semi-urban areas. This leaves just 2 percent of the qualified doctors, who are attached to about 23,000 primary health and 3000 community health centers, to attend to 70 percent of the population living in villages.

This paper discusses applying telemedicine to the rural India and care of individuals. In this paper, we (1) provide a background on the use of telemedicine and the technologies used in the telemedicine. And (2) review the benefits and uses of telemedicine.

The telemedicine facilities are established at many remote rural district hospitals in many states and union territories of the country including Jammu & Kashmir, Andaman & Nicobar Islands, Lakshadweep Islands, North Eastern States etc. State level telemedicine networks are established in Karnataka, Kerala, Rajasthan, Maharashtra, Orissa and Chhattisgarh. About 1.5 Lakh patients are getting the benefits of Telemedicine every year.

The latest computing paradigm, that is cloud computing can be the one of the best way to provide health services using telemedicine in rural areas of India . In this paper we my proposed architecture model of cloud and gives the idea of cloud computing as a service in the area of telemedicine . This describes how the cloud computing can be used effectively in telemedicine model of ICT .Keywords: Telemedicine, health services ,cloud , SaaS

CPIT 149.Cloud Computing framework with Mobile Applications using Java in Advanced e-Governance

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Abstract: In This paper we describes the new cloud computing framework system for everyone in e-Governance using java application, it is used for different purpose relating for computer science, electrical, electronics, mechanical, environmental science and many more fields etc... In this cloud computing framework we design a new computing system using java application for communication and transferring data as a social working of other relevant areas who has communicated to citizen to citizen, business to business and in this application we can providing the information to everyone through messages and conferencing alert system. In this technology we can used the alert system for citizens and that is sending an alert message for every related tip to every citizen, and we can communicate to every lower class peoples like citizen to citizen and people to people. In this paper we used a java application for alert system in cloud computing framework. It is also known also becoming increasingly important in a world with limited energy to technology. Information and Communication Technology (ICT) also used in e-Governance as alert facility and give the suggestion that it time to protect your health, improve technology, new technology, GPS system related tips for you and your children's. In this framework we protected by many ailing and give the knowledge of every technology, news. This paper also describes

cloud computing framework system for alert new technology with java mobile applications technology in advanced e-governance.

CPIT 150.Cloud supported e-learning for cost effective online learning

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Abstract: Software as a Service has been with us for some time like use of email services. This is a decades old concept. Educators to provide online contents , have been using cloud hosted services to deliver education for over a decade. This paper aims to propose an online learning management system (OLMS) delivered via the cloud in form of a web application seamlessly delivered over the Internet, and accessible from anywhere in the world. It is hosted on servers at a third parties' data center. The use of the Online Learning Management System is rented. The cost can be minimized as the software is updated frequently, and does not have to be maintained by the customer. This paper analyzed the difference ,that what a user should expect from the cloud: in terms of features, security, redundancy, scalability, automation and cost reduction .

CPIT 151.Comparative Analysis of Computer Forensics Tools

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Abstract: Today the computer has impacted almost every facet of our lives and has become a major means of communication. However, computer systems have also become the mainstay of criminal activity. For that we required computer forensics. Computer forensics involves obtaining and analyzing digital information for use as evidence in civil, criminal, or administrative cases.
This paper reviews the concept, advantages, disadvantages, process, and tools of computer forensics. Computer Forensics is mainly about investigating crime where computers have been involved. There are many tools available to aid the investigator with this task.
Forensic tools are emerging to help digital investigators preserve evidence on live, remote systems. These tools apply the precepts of digital forensics to incident response, enterprise policy enforcement, and electronic data discovery.
It traces the tools of computer forensic and reveals comparative analysis of the tools widely used. There are different kinds of tools available that are differentiated on the basis of work, software license, hardware-software configuration, causes of data loss, drive supported, supported feature, types of recovery software, types of file to be recovered, cost, etc. This paper focuses on comparing two well-known proprietary forensic tools namely Encase and Forensic Toolkit from varying parameters. Further in-depth study of Network File Recovery is carried out to support Forensic Toolkit with the help of MFT process.

CPIT 152.Comparative Analysis of Load Balancing Algorithms for Web

Server System

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Abstract: The growth of the Internet in past few years is causing rapid increase of client requests rate to popular web site. The popular websites constantly facing the problem of slower responses of web server that required improving the performance of the web servers regularly. Web server performance is the important issue for web site developer that can be solved by efficient load balancing algorithm. Load balancing is an important technique to improve the performance of the web servers. Incoming requests are evenly distributed to the servers present in the network to achieve quick responses. In order to achieve overall better performance, load balancing algorithm distributes the system load by transferring the load from heavy loaded node to lightly loaded node considering several load balancing policies. In this paper, comparative analysis of several existing load balancing algorithm for web server systems have performed to achieve better performance requirements of a web server in terms of low response time, high throughput and high scalability etc.

CPIT 153.Comparison of Load Balancing Techniques in Grid

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Abstract: A Grid is a large scale, dynamic collection of independent systems, geographically distributed and interconnected with high speed networks. Grid has many issues like scalability, fault tolerance load balancing etc., Load balancing is the one of the main research issue in the Grid. In this paper, we discuss different polices, algorithms, techniques and also compare all the existing load balancing techniques in the grid environment. Comparison has been performed on the basis of parameters like environment, scalability, response time, overhead etc. Finalized technique, we can use for balancing the load in the distributed environment.

CPIT 154.Comparitive Analysis of Visual Secret Sharing Techniques

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Abstract: Cryptography is the study of arithmetic techniques related characteristics of Information Security such as discretion, data security, entity authentication and data foundation certification, but it is

not the only means of providing information security, rather one of the techniques. Visual cryptography is a new technique which provides information security which uses easy algorithm unlike the complex, computationally intensive algorithms used in other techniques like traditional cryptography. Several algorithms have been proposed in the field of Visual cryptography (VC). The main aims of these algorithms are improving the security, reliability, and efficiency. We are going to review the concept of cryptography and at the last we have propose the efficient algorithm that uses the basic concept of Visual cryptography and image processing techniques which make a secure transfer of images or information between two trusted parties

CPIT 155.COMPARITIVE STUDY BETWEEN TELEPATHY AND TELECOMMUNICATION

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Abstract: The main aim to follow this research is to compare the characteristics of ancient telepathy and modern telecommunication. In modern era, telecommunication becomes a very essential part of our day to day life. Telecommunication provides us many facilities such as video chatting/conferencing, mobile conferencing, microwave transmission and many more. But in Vedic Kaal these techniques of communication were already used by our saints and sages in the form of extra sensory power(telepathy, clairvoyance, intuition) , they acquired these powers at the level of high consciousness .

We can say that there was no information technology when there were no computers and mean of telecommunication. Telepathy, intuition, clairvoyance etc, confirmed that there is an information technology which works beyond the physical plane and which exists from the time when none of our modern IT devices were invented. This paper is an attempt to throw light on the existence of such advance technologies which were known to our sages in vedic times as this will open new horizons of the development of mankind. Also taking help of spirituality as a tool of ancient IT we can retrieve the information treasure stored within the mankind as the supreme knowledge.

In the conclusion, we want to say that our vedic era is much more better then the modern era. We can prove with the help of further researches, that if we add some spiritual techniques in scientific methods in the IT tools and technologies then we can make our modern telecommunication more effective and advance.

CPIT 156.Conflict Resolution in LALR Parser

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Abstract: Despite all the advance brought by LALR parsing method in Late 60's conflict can be removed in non productive way. For the purpose of changing this scenario, automatic generator comes which removes some type of conflicts but for all input strings these automatic generators can not solve the problem because of their approach of using production rule which comes first(these production rules are those which causes reduce/reduce conflict) .Here we present methodology by which we can resolve these types of conflict manually which is valid for all input strings .

Basically there are two type of conflicts exist shift/reduce and reduce/reduce in which shift/reduce was removed manually in LALR parser but reduce/reduce conflict still not be solved completely. Automatic generator providing the approach of using first production rule among those which causes reduce/reduce

conflict. In this report we define techniques from which we can able to solve conflicts in every type of grammar.

CPIT 157.Correlation-based Image Fusion using Pearson Correlation Theory

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Abstract: Image fusion is the method of combining two or more images into a single image to obtain more appropriate information. The resulting fused image will be more informative than any of the input images. In this paper Correlation based approach for fusion of images gathered by different wireless sensors on the basis of Pearson's correlation theory has been described. We present a comparative study of previously available and applied correlation approaches for image fusion. Our method is based on calculating the intensities of the pixels of the image and its gray scale equivalent. This paper also describes the analytical techniques for evaluating the quality of image fusion by using various methods including Signal-to Noise Ratio(SNR), Normalization Root Mean Square Error (NRMSE) and Deviation Index (DI) to estimate the quality and degree of information improvement of a fused image quantitatively

CPIT 158.COVERAGE IN WIRELESS AD HOC SENSOR NETWORKS: A SURVEY

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Abstract: Wireless sensor networks have sparked immense research interest since the mid 1990's. Ongoing improvements in affordable and efficient integrated electronic devices have put a great impact in the advancement of wireless sensor networks, which has enabled this field for a broad range of applications in battlefield surveillance, environment monitoring, industrial diagnostics, healthcare etc. Coverage which is one of the most important performance metrics for sensor networks resonates how accurately a sensor field is monitored. The coverage concept for a sensor field is accountable to a wide range of apprehensions due to a diversity of sensors and applications. Due to constrained resources for a sensor node it is valuable to construct a fully covered and energy efficient sensor network for real world applications. There are different conceptions that have been proposed based on the coverage type, deployment mechanism as well as network properties. This paper surveys research progress made to address various coverage problems in sensor networks. I present various coverage formulations and their assumptions as well as an overview of the solutions proposed.

CPIT 159.Data Reduction on Financial News Data

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Abstract: Dimensionality reduction is the transformation of high-dimensional data into a meaningful representation of reduced dimensionality. This paper presents a novel method of using combinational method of dimension reduction on financial news corpus. We propose the pattern aggregation method to reduce the dimensionality which further is reduced using Latent Semantic Indexing.

CPIT 160.Data Structure: Design, Analysis and Complexity

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Abstract: Data structures are generally based on the ability of a computer to fetch and store data at any place in its memory, specified by an address — a bit string that can be itself stored in memory and manipulated by the program. Thus the record and array data structures are based on computing the addresses of data items with arithmetic operations; while the linked data structures are based on storing addresses of data items within the structure itself. Many data structures use both principles, sometimes combined in non-trivial ways (as in XOR linking) the implementation of a data structure usually requires writing a set of procedures that create and manipulate instances of that structure. The efficiency of a data structure cannot be analyzed separately from those operations. This observation motivates the theoretical concept of an abstract data type, a data structure that is defined indirectly by the operations that may be performed on it, and the mathematical properties of those operations (including their space and time cost).

CPIT 161.Data Warehouse Modeling OLAP: An Interactive Analysis Tool

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Abstract: Data warehouse is the electronic storage of a large amount of information by a business. Warehoused data must be stored in a manner that is secure, reliable, easy to retrieve and easy to manage. A data warehouse is a relational database that is designed for query and analysis rather than for transaction processing. It usually contains historical data derived from transaction data, but it can include data from other sources. It separates analysis workload from transaction workload and enables an organization to consolidate data from several sources. Accompanying the growth in data warehousing is an ever-increasing demand by users for more powerful access tools that provide advanced analytical capabilities. There are two main types of access tools available to meet this demand, namely Online Analytical Processing (OLAP) and data mining that manage the process of gathering data and delivering it to business users. OLAP describes a technology that uses a multi-dimensional view of aggregate data to provide quick access to strategic information for the purposes of advanced analysis. Although OLAP applications are found in widely divergent functional areas, they all have the following key features: multi-dimensional views of data support for complex calculations and time intelligence. There can be many benefits of using OLAP including increased productivity of end-users, reduced backlog of applications development for IT staff, retention of organizational control over the integrity of corporate data, reduced query drag and network traffic on OLTP systems or on the data warehouse and improved potential revenue and profitability.

CPIT 162.Database Encryption: New Technology To Secure Database Content

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Abstract: The need to secure computer systems is well understood and securing data must be part of an overall computer security plan. Sensitive data are stored in the database and increased rapidly. We can assess this database through internet. As we know that data is available digitally, we can assume that vulnerabilities and threats to the integrity and confidentiality of that data will grow as well. Database security is becoming an increasingly important topic and users need to develop well understandings in this field. The primary objectives of database security are to prevent unauthorized access to data from the database, prevent unauthorized tampering or modification of data from database, and to insure that data remains available when needed in the database. The concepts related to database security are multifaceted. Encryption can provide strong security for database, but there are many issues for consideration to developing a database encryption strategy. In this paper we have designed model for data base security with proposed encryption algorithm model. The proposed encryption model will use 128 bits encryption algorithm. Proposed model has only one change as compared existing is encryption model. The performance and security issues have considered in the proposed work because it all ready known that in real-world scenarios, these are complex issues and experts should be used who understand all available options and the impact for each particular customer environment. We will prove less query execution times from proposed encryption model. We believe, from past experience, database privacy as an infrastructure service is a viable model and has a good chance of emerging as a successful offering for most applications.

CPIT 163.DECISION SUPPORT SYSTEM FOR AUTOMOBILES

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Abstract: The Decision Support Systems (DSS) is used by the top level management. It helps the top level management to take the unstructured decisions in the management. An unstructured decision is a very tedious and difficult decision as there is no clear procedure available for such a decision. The topic of our project is decision support system for automobiles. Our project can help the customers and company both in making decisions regarding automobiles. It helps the customers in the way that they can feed their requirements according to their uses in our software and in return they can get desired results. It also helps the company in making decisions so as to visualize that which models are in demand by customers so that they can get the more profit in the market. It also helps to understand which models have been preferred by customers.

DSS:A system that supports technological and managerial decision making by assisting in the organization of knowledge about ill-structured, semi structured, or unstructured issues. A structured issue has a framework comprising elements and relations between them that are known and understood. Structured issues are generally ones about which an individual has considerable experiential familiarity. A decision support system (DSS) is not intended to provide support to humans about structured issues since little cognitively based decision support is generally needed.

CPIT 164.Descriptor for Emotion Recognition

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Abstract: This paper is connected with descriptor for based emotion recognition. The main work is concerned with designing a database for speech based emotions. GMM models are used which are known to capture distribution of data point from the input feature space, therefore GMM are suitable for developing emotion recognition model when large number of feature vector are available. Moreover Linear Predictive (LP) analysis method has been chosen for extracting the emotional features because it is one of the most powerful speech analysis techniques for estimating the basic speech analysis techniques for estimating the basic speech parameter such as pitch, formants, spectra, vocal tract functions and for representing speech by low bit rate transmission for storage. Recognition of Emotions from Speech-Speech features may be basically extracted from excitation source, vocal tract or prosodic points of view to accomplish different speech tasks. This work confines its scope to spectral features used for recognizing emotions. Normally excitation features are extracted through block processing approach

CPIT 165.Design a New Methodology Based on PBSDC for Face Recognition

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Abstract: The objective of face recognition involves the extraction of different features of the human face like ridges, minutia's etc from the face image for discriminate it from other persons. It is the problem of searching a face in given database to find the matches as a given face. The purpose is to find a face that has highest similarity with a given face in the database. Many face recognition algorithms have been developed and used as an application of access.
For enhancing the performance and accuracy of biometric face recognition system, we proposed a multi-algorithmic approach, that is a well combination of four different recognition methodology is called PBSDC technology.

CPIT 166.Detecting Community Structure based on Traffic at Node in Networks

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Abstract: In the study of networks, such as complex network, social network or biological network; number of different characteristics of many nodes is found common. These characteristics include small-world property, clustering and community structure, among others. In the context of networks, community structure refers to occurrence of groups of nodes in a network that are more densely connected internally, then with the rest of network. This heterogeneity of connection suggests that network has certain natural division within it. Being able to identify their sub-structure within the network can provide inside into how network function and topology affects each others.
Finding communities within the network can be difficult task. Several methods for community finding have been developed and employed. Minimum cut method, hierarchical clustering, Girvan – Newman algorithm are few of many algorithms employed to find community structure. They either uses top-down or bottom-up approach for detecting communities in the graph. Nodes belongs to which community, depends on their connection with other adjacent node on basis of similarity or distance measure.
This dissertation proposes edge betweenness measure based on traffic relies over an edge. It is most suitable for complex networks derived from Internet traffic, Internet topology and routing properties using network traces.
Edge betweenness is intensity of connection between two nodes of the network, which represent variable expressing the frequency of the participation of that edge to a process. Betweenness measure is determined by shortest path or densities of random walk.

CPIT 167.Development of Image processing in Camouflage image Detection

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Abstract: Camouflage is an attempt to obscure the signature of a target and also to match its background. Decamouflaging technique is basically used to detect foreground object hidden in background image. In this paper author identified camouflage detection techniques for different applications and also compared the technique with advantages and disadvantages.Auther also proposed method to detect hidden object in camouflaged image based on texture analysis.
Keywords: Camouflaged Detection, Camouflaged texture, Texture analysis

CPIT 168.Diffusion of Product by System Dynamic Modeling

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Abstract: In this paper, we provide theoretical arguments and empirical evidence for how system dynamic modeling can be used for efficient estimation of diffusion of a new product in the market. This paper describes a system dynamic model which integrates a number of key concepts presently used to understand the diffusion process. It then illustrates how simulation can be used to understand the critical success factors in diffusion process. The model can be used as a "sales forecasting simulator" in managerial training to help new product managers understand the dynamic interactions among different elements of new product launch.

CPIT 169.Digital Signature & Cryptography

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Abstract: Security of data is a major concern in modern society, especially given the utilization of digital techniques in the creation, editing and distribution of sensitive data. A wide variety of systems require reliable personal recognition schemes to either confirm or determine the identity of an individual requesting their services because only the intended user should get an access to the data. Few examples of such systems include access to ATMs, buildings, cellular phones, desktop PCs, workstations and computer networks. Biometrics refers to the automatic recognition of individuals based on their physiological and/or behavioral characteristics. Since biometric characteristics are distinctive, cannot be forgotten or lost, and the person to be authenticated needs to be physically present at the point of identification. This article discusses the various biometric technologies, the advantages and disadvantages of biometric technologies, the security issues and finally the applications of various biometric technologies in day today life.

CPIT 170.Educational Data Mining Using Classification to Find Interestingness in Higher Education

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Abstract: In the last two decades, number of Higher Education Institutions (HEI) grows rapidly in India. Since most of the institutions are opened in private mode therefore, a cut throat competition rises among these institutions while attracting the student to got admission. This is the reason for institutions to focus on the strength of students not on the quality of education. This paper presents a data mining application to generate predictive models for engineering student's dropout management. Given new records of incoming students, the predictive model

can produce short accurate prediction list identifying students who tend to need the support from the student dropout program most. The results show that the machine learning algorithm is able to establish effective predictive model from the existing student dropout data.

Keywords: **Data Mining, Machine Learning Algorithms, Dropout Management, Predictive Models**

CPIT 171.Efficient storage mechanisms in Online Social Networks (OSN)

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Abstract: In the present world, the Social networks have been evolving out to be the common source of interacting medium for the people, irrespective of geographical regions and distances. People are now participating more strongly in any kind of issues like political issues, social issues or any other issues and putting their opinions on social networks. As a result, everyday a huge amount of data are being generated in the form of images, videos, and personal information which are getting updated by these users. And this is the power of people interacting with people in the online social network which has set many challenges for the researcher to work on. And one of the important issues is, storing of these huge data and analyzing these stored social data. In face book, few technical facts reveal that an average of 250 millions of photographs are uploaded to the service every day, which is equal to 10.4 million per hour and 174,000 per minute and 3000 photograph per seconds. So in such scenario, essentially we need to have some efficient methods for storing and serving these enormous amounts of data. In this paper we have compiled and analyzed different advanced approaches that are used to store such huge amount of data along with some important methods which are used to serve these data. We have also emphasized some recently used storage systems and proposed our new idea through which these data can efficiently be stored and served to the user.

CPIT 172.E-Governance: An alternative approach and hurdles faced by rural people

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Abstract: The word "èlectronic" in the term e-Governance implies technology driven governance i.e the application of information and communication technologies to transform the efficiency, effectiveness,transparency and accountability of informational and transactional exchanges within government ,between government and government agencies of each levels, so to reach the beneficiary and ensure that the services intended to reach the desired individual has been met with.
This paper first presents the definition of E-Governance, then the problems faced in rural states with its solutions and finally brief some future directions.

CPIT 173.Emerging technologies and paradigm shift in E-learning Architecture

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Abstract: E-learning has taken the world through new educational revolution. This improvises the human zeal to get the education irrespective of their age, resources and position. Many tools, techniques and modes are in front of learner who wishes to learn. E-learning extends its hands to the entire knowledge seeker to tu**rn their businesses into learning cultures, delivering training and expertise on demand as and when needed.** The understanding of e-learning varies from person, culture and demand. An instructional designer often means with e-learning merely a courses or learning materials directed to meet and objective as a need of program development. A corporate trainer may view e-learning as a combination of courses and knowledge management. Moreover emerging of new technologies are also possessing threat to the modern e-leaning environment. The present work is to enhance the e-learning architecture and to make it best suited with the emerging technologies like web3.0 and semantic web. It also emphasizes the importance of Vedic leaning and their inclusion in the current e-learning scenario

CPIT 174.Energy Efficient Clustering Algorithm for Wireless Sensor Network: An Iterative Learning Approach

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Abstract: Wireless sensor networks (WSNs) are envisioned to become of major importance in distributed sensing applications. Energy consumption is an important issue in the design of wireless sensor networks which typically rely on non-renewable energy sources like batteries. In this paper we have proposed a new routing scheme for wireless sensor network by using iterative learning approach after making cluster head in the network and in that small cluster network make a reporting node in that small cluster network which act as sub cluster head. Our primary goal is to make an energy efficient clustering routing algorithm with the help of iterative learning approach to minimize the energy consumption utilized by sensor nodes. This approach is a modified version of existing LEACH protocol for WSN that leads to the problem of total network dependency on a main cluster head.
Keywords- component; Reinforcement learning, Q-Learning, TDMA, CDMA, Broadcasting, Clustering, LEACH protocol, K-Means.

CPIT 175.ENHANCED RSA DIGITAL SIGNATURE ALGORITHM

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Abstract: Generally, digital signature algorithms are based on a single hard problem like prime factorization problem or discrete logarithm problem or elliptic curve problem. If one finds solution of this single hard problem then these digital signature algorithms will no longer be secured and due to large computational power, this may be possible in future. The RSA digital signature algorithm (RSADSA) is an asymmetric cryptographic technique, whose security is related to the difficulty of factorization. But if one would solve the factorization problem then he would get the private key too. RSADSA is not only vulnerable to the prime factorization attacks but also to the small private exponent d and small public exponent e attacks. So to improve security, this paper presents a new variant of digital signature algorithm which is based on two hard problems, prime factorization and x^{th} root problem. The proposed algorithm is a modification of the RSA digital signature algorithm.

CPIT 176.Enhancement of Image by using Different Spatial Domain Methods

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Abstract: The aim of image enhancement is to improve the interpretability or perception of information in images for human viewers, or to provide `better' input for other automated image processing techniques. It is a technique for improving the visual quality of image and this technique is applied to a great extent in the field of Medical science, Military area etc. Enhancing image can be done in two ways 1)pixels level where directly pixels can be operated upon and 2)by calculating the Fourier transform of an image.
This paper analyses different methods that operate directly on pixels(Spatial domain) are discussed, like Grey scale manipulation, Histogram Equalization, Image smoothing, Image sharpening, and High boost filtering. This paper introduces another method of image enhancement in which the individual pixel are enhanced separately and these enhanced pixels are then blended to produce an overall enhanced image. This method can be utilized in the domain where only the selected area of an image need to be improved.

CPIT 177.Ensuring Cloud Security using Efficient Identity Management

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Abstract: Identity Management works as an interface between data processing organizations and legal policy makers. It provides data security in a simpler way where large number of users can be benefitted in managing their identities for specific contexts. As per analyst firm Gartner's CIO Survey of 2010, Identity Management is the primary concern for security. Cloud Computing which provides infrastructure, software and storage on demand has many security concerns. These include confidentiality, integrity and availability which restrict users from adopting a cloud computing model. An efficient Identity Management is required by cloud for these security concerns, controlling user identities and access privileges to resources as traditional systems cannot meet the new responsibilities. This paper aims to introduce Identity Management for managing authentication needed among different users for federation establishment, managing data on IT systems and application about users. The Cloud Computing technology that incorporates different IT strategies is discussed. Identity management is also discussed which helps a secure cloud migration, enable single sign-on and connect to every customer and administrator securely. Also the use of Identity Management in Cloud Security is discussed.

CPIT 178.EVALUATION OF DATA MINING AND KNOWLEDGE DISCOVERY

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Abstract: Data Mining and Knowledge Discovery are rapidly evolving areas of research that are at the intersection of several disciplines including statistics, databases, artificial intelligence, visualization and high performance and parallel computing . Data Mining is core part of Knowledge Discovery process (KDD). The KDD process consist of data selection, data cleaning, data transformation, pattern searching (data mining) and finding pattern evaluation. Databases, pattern recognition, machine learning, data visualization, optimization, and high-performance computing, to deliver advanced business intelligence and web discovery solutions. Focusing specially, on the definition of data mining, it has been described as "the task of discovering interesting patterns from large amount of data where the data can be stored in databases, data warehouses or other information repositories". Thus data mining is extraction of implicit, previously unknown; potentially use for information from the vast amount of data available in the data sets (databases, data warehouses or other information repositories). Thus goal of data mining and knowledge discovery is to turn "data into knowledge". The tools use different data mining technique and algorithm. The tasks of data mining are distinct because many patterns exist in the large database. All the techniques can be integrated or combined to deal with a complicated problem resides in these large databases. Most of data mining tools employ multiple methods to deal with different kind of data in different application areas. Based on the pattern one is looking for the data-mining task, which can be classified into summarization, classification, clustering, association.

CPIT 179.Evolutionary Computational Techniques for Designing Optimal Model of Artificial Neural Networks for Times Series Forecasting.

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Abstract: Artificial Neural Network (ANN) is a powerful tool to depict and resolve non-parametric non-linear models. In finance, algorithms of artificial neural networks are getting an important place especially in the areas of market forecasting. In this paper an attempt is made to find optimal model for forecasting Indian stock prices and trends using artificial neural network (ANN). Optimization of ANN model is done using techniques of evolutionary computation. Technique of feed forward back propagation artificial neural networks (BP ANN) has been used for forecasting. Selection of optimal ANN model is done by using evolutionary computational techniques like genetic, memetic and hybrid algorithms. Optimal model for forecasting the stock market time series is developed. Various controlled parameters which are considered for the design of optimal ANN model development are inputs, transfer function at the input, hidden and output layers, neurons at the input, hidden and output layers, number of hidden layers,values with respect to momentum, learning rate and error tolerance. Performance evaluation is done on the basis of the forecasting errors calculated between the actual and predicted values of time series.

CPIT 180.E-Waste: A Threat to Global Environment & Health

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Abstract: "E-waste" is a one of the rapidly growing problem today in the world. Disposal of e-waste is an being global environmental & public health issue. E-waste contains hazardous constituent that may egatively impact the environment and affect human health if not properly managed. Waste Electrical and Electronic Equipment is a loss category of surplus, obsolete, broken, or discarded electrical or electronic devices. In India most of the waste e-items are stored at households as people don't know how to discard them. Some useful products such as gold, silver, copper which can be recovered & brought back into the production units. Just one computer can contain hundreds of chemicals, including lead, mercury, admium, brominated flame retardants, and polyvinyl chloride (PVC). Many of these chemicals are known to cause cancer, respiratory illness. They are especially dangerous because of their ability to travel long distances through air and water and to accumulate in our bodies and the environment. Today there is an urgent need for improvement in all the aspect of e-waste management, rules and policies for the workers who are working in e-waste disposal. Last but not the least education regarding this activity to the environment as well as public health should be explained properly.

CPIT 181.Extreme Programming

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Abstract: The impact of technology is increasing pervasive. Extreme programming is the most well known agile methodology although there are several alternative brands .The development method you actually practice determines the kind of team you have and the kind of software you produce. Extreme programming team uses a simple form of planning and tracking to decide what to do next and to predict when any desired feature set will be delivered. Focused on business value, the team produces the software in a series of small fully integrated releases that pass all the tests that the customer has defined. Extreme Programming is a software development method that emphasizes simplicity, feedback, courage and communication. Extreme Programming (XP) is a lightweight development methodology defined by Kent

Beck.The first Extreme Programming project was started in March 6, 1996.One of the popular agile processes is Extreme Programming. XP concentrates on frequent planning, designing, testing and communicating. Extreme programming (XP) is a software development methodology which is intended to improve software quality and responsiveness to changing customer requirements. XP uses an iterative and incremental software process executed in relatively short cycles. Some changes may still be expensive but they tend to be cheaper when practiced in when practiced in short cycles with rapid feedback. It works by bringing the whole team together in the presence of simple practices, with enough feedback to enable the team to see where they are and to tune the practices to their unique situation. XP is people-oriented rather than process oriented, explicitly trying to work with human nature rather than against it. XP tends to use small teams, thus reducing communication costs. XP puts Customers and Programmers in one place. The present paper highlights the concept of extreme programming and focuses on its values, activities, practices.

CPIT 182.Fuzzy Logic based knowledge extraction in Textual Data

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Abstract: Knowledge extraction is a challenging and an important task in data mining field and has great importance in text classification applications. Many research works has been done in this field but there is a need to improve the accuracy to find the knowledge extraction and categorize a collection of text documents. Recently, numerous different rule generation algorithms available but they aren't efficient and accurate for textual data. This paper proposed a fuzzy based approach in textual data to extract knowledge and proposed a new framework. The proposed framework, works efficiently and effectively with great performance and high accuracy.
Keywords: - Textual Data, Fuzzy Logic, Knowledge Extraction.

CPIT 183.GPS Enabled Rover for Maximizing Predefined-coordinate Tracking using Great Circle Algorithm

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Abstract: This paper describe the prototype of an automated ground vehicle to perform predefined coordinatetracking operations using GPS. Its development results from the integrated design of the vehicle with its navigation, guidance and control system. This integrated design process is oriented toward directly maximizing the trajectorytracking performance, rather than individually optimizing secondary mechanical performance characteristics, as in more traditional methods. Detailed covariance analyses and closed-loop simulations are carried out to evaluate the ultimate dynamic performance and to quantify the impact of each vehicle parameter. In particular, the performance sensitivity is analyzed with respect to parameters for which no obvious selection criteria exists, such as the vehicle's sense of motion or the positioning sensor location, which prove to be decisive characteristics. Experimental testing on a prototype rover confirms the simulations' results and validates the selection of the vehicle design parameters

CPIT 184.Green Cloud Computing: A Solution of Save Energy

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Abstract: Cloud computing is offering utility oriented IT services to users worldwide. It enables hosting of applications from consumer, scientific and business domains. However data centres hosting cloud computing applications consume huge amounts of energy, contributing to high operational costs and carbon footprints to the environment. With energy shortages and global climate change leading our concerns these days, the power consumption of data centers has become a key issue. Therefore, we need green cloud computing solutions that can not only save energy, but also reduce operational costs. The vision for energy efficient management of cloud computing environments is presented here.
Keywords— Computing, Cloud Computing Security, ARPANET, Service Level Agreement (SLA), DVFS, VM

CPIT 185.Green Computing: A Survey

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Abstract: Due to the increase of population in current situation the use of energy has also increased. Because of the use of the technology mainly computers, now a day's, reduce the side-effects of this energy rise is a urgent challenge as the consumption power is continuously increasing. Within computer science, benchmarks that measure various aspects of performance are common and widely used in the literature, yet benchmarking in order to measure power consumption of computers has not received the same attention.
In this paper we mainly discuss and measure the techniques by which we can reduce the power consumptions of computers. Analysis of these techniques provides a key metric in the area of Green Computing.

CPIT 186.Gurmukhi Online Handwriting Recognition

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Abstract: The common handwriting recognition methods are Statistical, syntactical and structural, neural network and elastic matching. Support vector Machine (SVM) is a concept in statistics and computer science for a set of related supervised learning methods that analyze data and recognize patterns, used for classification and regression analysis. This paper presents implementation of Support Vector Machine to recognize online handwriting Gurmukhi strokes. Preprocessing of Gurmukhi strokes consists of 5 basic algorithms for preprocessing. Prior to these algorithms, a basic step called Stroke Capturing is done, In

this paper we have discussed a simple way to store data for Gurmukhi strokes and two cross validation techniques, namely, holdout and k-fold strategies for recognition of Gurmukhi strokes. These strokes are taken from the one hundred Punjabi words written by 2 writers.

CPIT 187.Hand Biometrics using Weighted Geometrical Features

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Abstract: Biometrics, which can be used for identification of individuals based on their physical or behavioral characteristics, has gained importance in today's society where information security is essential. Hand geometry based biometric systems are gaining acceptance in low to medium security applications. Hand geometry based authentication/identification systems utilize the geometric features of the hand like length and width of the fingers, diameter of the palm and the perimeter. The proposed system is a verification system which utilizes these hand geometry features for user authentication. The system accepts a gray scale handprint from which it extracts the finger lengths, finger widths, palm width and perimeter. For accuracy, ratios of these parameters are taken. Weighted features have been used and it is observed experimentally that results are better.

A peg-free hand-geometry verification system has been developed which is independent of orientation and placement of the hand. The verification system extracts the feature vector from the image and stores the template for later verification. FRR is obtained by comparing the two feature vectors of the same hand and FAR is obtained by comparing the feature vectors of two different hands.

CPIT 188.HUMAN HIDDEN EMOTIONS RECOGNITION BY BODY GESTURE AND POSTURE

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Abstract: A successful interaction between Human and Computer can identify the hidden emotions generated in human mind in different situations. This paper explores the technique to identify the human hidden emotions through his body gesture and posture. The whole system works in two different phases: Training, Classification and Matching – Emotions. In the training phase the different images of body gesture are normalized and the relevant features are extracted by using Principle Component Analysis (PCA). Which is the overall representation of emotions in a vector form, consist almost all the necessary characteristics of emotions. In the classification phase the extracted components are trained by Neural Network especially by hierarchical radial basis function network (HRBFN). The classified training set is ready to match the newly captured image of body gesture and the pattern of human emotions which can be identified.

CPIT 189.Information Retrieval from Distributed Databases using Fuzzy Similarity Rough Sets

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Abstract: With the advent of computers, it became possible to store large amounts of information and finding useful information from such collections has become a necessity. Given this Cascade of data, there is an urgent need for technologies that will allow efficient and effective processing of huge datasets. Although the Structured Query Language (SQL) is a very powerful tool, it is unable to satisfy needs for data selection based on linguistic expressions and degrees of truth. Several IR systems are used on an everyday basis by a wide variety of users and the sole aim is how rapidly and effectively the needed information can be retrieved from huge databases. There is always huge uncertainty involved with the imprecise data. Fuzzy logic has been adopted as the main tool for representation and handling the uncertainty. In this paper we propose a method for mapping the user's requirements with distributed databases based on fuzzy Similarity rough sets.

CPIT 190.Integrated National Citizen Database Model Based on AADHAR

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Abstract: The Project AADHAR (UIDAI) is a sprouting approach of e-governance in India. It is believed that UIDAI will help address the rigged state elections and widespread embezzlement that affects subsidies and poverty alleviation programs such as NREGA. Addressing illegal immigration into India and terrorist threats is another goal of the program.
But there are some issues that restrict in the successful implementation of this project like, its present working pattern which lead to time delay and reliability issues. In this paper we propose a new theoretical concept that is Integrated National Citizen Database Model (INCD) which will deliver quick and effective services to the government and citizens.
INCD model is going to be a game changer in the present scenario of Indian development. It is expected to create a new benchmark for development of the country with a shift in approach, to the project AADHAR (UIDAI) that will now better aligns technology with service delivery goal and enable various government departments to re-use developed assets in need of coming generation.

CPIT 191.Issues and Challenges in ERP based E-governance model

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Abstract: E-governance is a proven, better and efficient way for the citizens of any state or a country to interact with the government services. Enterprise resource Planning (ERP) when combined with e-governance can incorporate all the government functions together into a single integrated system with a central management system. This system certainly helps different departments of government to

communicate as well help them to share information in spite of geographical barriers. In other way we can say that, any government needs to be well equipped with the modern technologies in order to provide reliable, responsible, seamless, and citizen centric government to all its citizens. The interest generated by the ERP implementation in the public sector, and the peculiarities of this sector make specific studies of ERP in government organizations necessary. This paper focuses on some of the issues and challenges that will be taken care while thinking to implementing ERP based e-governance model. Along with the benefits of centralization and seamless intercommunication of different government departments there will be some challenges to adopt and implement it in practical with resistive change from operational, technical, managerial personals and as well as from the citizens.

CPIT 192.ANALYSING IMAGE DENOISING USING NON LOCAL MEANS ALGORITHM

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Abstract: Digital image processing remains a challenging domain of programming. All digital images contain some degree of noise. Often times this noise is introduced by the camera when a picture is taken. Image denoising algorithms attempt to remove this noise from the image. In this paper the method for image denoising based on the nonlocal means (NL-means) algorithm has been implemented and results have been developed using matlab coding. The algorithm, called nonlocal means (NLM), uses concept of Self-Similarity. Also images taken from the digital media like digital camera and the image taken from the internet have been compared. The image that is taken from the internet has got aligned pixel than the image taken from digital media. Experimental results are given to demonstrate the superior denoising performance of the NL-means denoising technique over various image denoising benchmarks.

CPIT 193.Local language in Indian software industry

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Abstract: The Indian information technology industry has played a key role in putting India on the global map. Over the past decade, the Indian IT sector has become the country's premier growth engine. But the usage of IT technology is more in urban area compare to rural area of India. There are many regional

languages in India. Hindi is the third most used and understood language in the world which is ignored by the Internet. Majority of contents on internet are in English language. Most people that use computers get trained to use English-based software and are unwilling to shift to local language-based computing software. By this paper authors try to prove that if localization is improved then the usage of IT in rural area can be increase.

CPIT 194.Moving objects Location Tracking Method with Mobile Communication Technology

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Abstract: Because of the recent expansion in mobile communication technologies, the usage of mobile devices becomes more and more popular, and novel services are being developed to serve various needs. One of the popular services for mobile devices is the location-based service (LBS) that exploits the location information of moving objects like mobile devices. Now a days, the following queries are utilizing the ‘‘location’’ of moving objects: ‘‘Find the location of a person with a phone number T.’’, ‘‘What is the nearest restaurant to a hotel Z?’’, or ‘‘Where is the delivery automobile, shipping the TV that I purchased over the Internet?’’ and so on. In real world most of the time moving objects can follow along the road or stay some ware in mobile tower and is difficult without GPS system. In order to support LBS without GPS system, in this paper we suggest location tacking method for moving object. Here we expressed moving objects as geometric points in two dimensional polar space (r,θ) with fundamental of mobile tower and directional technology. Our method becomes especially useful for tracing moving objects in specific mobile tower.

CPIT 195.Low Power Task Enabled Selective Trimming Instruction Cache scheme for Embedded System

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Abstract: Embedded design faces the challenges of designing devices for high performance with the low power consumption. Reducing energy consumption is an important issue for battery powered embedded computing systems. Cache memory may consume up to 50% of System’s energy . As embedded computing system is moving towards multicore multitasking system caching becomes more prominent in terms of power consumption. This work proposes a new Task- Enabled Selective Trimming (TEST) cache mechanism to reduce significantly amount of dynamic energy consumed and static leakage power in multi-tasking embedded system. TEST scheme adresses the issue of cache interference problem in the instruction cache in a multitasking embedded system. This scheme enables significant reduction in dynamic energy and static leakage power with negligible miss-rate impact.

The performance of TEST scheme is evaluated and compared with conventional cache which shares an instruction cache for all the tasks. Experimental results are obtained using Simplescalar 3.0 cache simulator for Mi-bench embedded benchmarks with Roundrobin and RMA scheduling algorithm.

CPIT 196.Machine Learning Classification Model of HIV with other Diseases on the Basis of Amino acid Composition

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Abstract: HIV is human immunodeficiency virus causes AIDS (acquired immunodeficiency syndrome) which leads to life threatening opportunistic infections. Person suffering from HIV having other infections also such as tuberculosis, cancer and other viral diseases. Due to all these infections, the proper treatment of the patient becomes difficult. Hence antiretroviral therapy (ART) has come into existence. The overlapping patterns in the disease lead to uncertainty in prediction of HIV and thus pose challenges for development of computational model for prediction of HIV with fair accuracy. The machine learning approaches for prediction of HIV related other diseases are fast and economical therefore can be used to complement the existing wet lab techniques. Realizing their importance, in this paper an attempt has been made to correlate them with their amino acid composition and predict them with fair accuracy. The SVM has been implemented using Lib SVM package. The method discriminates HIV, HIV-TB, HIV-Cancer, and other viral related diseases using amino acid composition. The performance of the method was evaluated using 5-fold cross-validation where accuracy of 93% was obtained.

CPIT 197.Methodology for improving accuracy of software cost estimation

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Abstract: Accuracy in Cost estimation is an important parameter for any type software development. This paper provides a general overview of software cost estimation methods and how to improve software cost estimation accuracy. If we changes in effort multipliers (analyst's capability, programmer's capability, application experience, language experience, data base size, turnaround time, main memory constraint, time constraint) then significant changes in cost of software. In this study we choose COCOMO-I, COCOMO NASA, Project 02, 03, 04 data applied the feature subset selection method. The

core technology used in this study is FSS (feature subset selection). FSS is an efficient and more accurate method through subsets of the available attributes. We start study with feature subset selection method and the COCOMO effort estimation model. Finally in this study we get features subset selection always significantly improves accuracy of cost estimation sometimes, that improvement can be quite dramatic. In the future, we are planning do more satisfaction analysis to better understand the FSS on COCOMO

CPIT 198.Modelling bimodal characteristics of traffic flows

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Abstract: Bimodal characteristics of vehicular traffic flows have been modeled mathematically. Set up as a dynamical system, the bimodal distribution is seen to have a fixed point that is connected to itself by a homoclinic solution. The conditions giving bimodality have been established. They are shown to cause symmetry breaking in the model, and a shift from bimodal to unimodal behaviour.

CPIT 199.Modified ElGamal over RSA Digital Signature Algorithm (MERDSA)

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Abstract: Generally digital signature algorithms are based on a single hard problem like prime factorization problem, discrete logarithm problem, elliptic curve problem. If one finds solution of this single hard problem then these digital signature algorithms will no longer be secured and due to large computational power, this may be possible in future. There are many other algorithms which are based on the hybrid combination of prime factorization and discrete logarithms problem but different weaknesses and attacks have been developed against those algorithms. This paper also presents a new variant of digital signature algorithm which is based on two hard problems, prime factorization and discrete algorithm.

CPIT 200.MOUSE SIMULATION AND HAND GESTURE RECOGNITION SYSTEM

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Abstract: Even after more than two decades of input devices development, many people still find the interaction with computers an uncomfortable experience. Efforts should be made to adapt computers to our natural means of communication: speech and body language. The aim of this project is the proposal of

a real time vision system for its application within visual interaction environments through hand gesture recognition, using general-purpose hardware and low cost sensors, like a simple personal computer and an USB web cam, so any user could make use of it in his office or home. The basis of our approach is a fast segmentation process to obtain the moving hand from the whole image, which is able to deal with a large number of hand shapes against different backgrounds and lighting conditions, and a recognition process that identifies the hand posture from the temporal sequence of segmented hands through which we are able to guide our computer to perform the required task in a lucid manner. In novice language we are basically removing mouse by webcam. It helps us in removing the complexity of using the computer for physically disabled person for whom working in computer is really a matter thought.

CPIT 201.MULTILINGUAL INFORMATION EXTRACTION AND NLP FOR INFORMATION ACCESS SYSTEM

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Abstract: Unity in diversity is could be the next objective of Web 3.0 or Semantic Web. CLIR is the key factor in adding semantic to web coz it solves the problem of diversity in the communication languages as it is huge problem to solve for social computing and universal usability.Thus Semantic Web is to create a universal medium for the exchange of mulitilingual data.This proposal deals with the development and modeling of ontologies for multilingual information system, thus providing a foundation structure for universal access to information system.

CPIT 202.NEW APPROACHES FOR SET COVERING PROBLEM

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Abstract: The set covering problem is a classical question in computer science and complexity theory. It is a problem "whose study has led to the development of fundamental techniques for entire field "of approximation algorithms. Several sets of inputs are given. They may have some elements in common. We must select a minimum number of these sets so that the sets we have picked contain all the elements that are contained in any of the sets in the input.This project is based on algorithms named Greedy Algorithm and Genetic Algorithm. The Greedy algorithm always makes the choice that looks best choice will lead to a globally optimal solution. The greedy method is quite powerful and works well for a wide range of problems for example "Minimum Spanning Tree". The Genetic algorithms are search algorithms based on the mechanics of natural selection and natural genetics. They combine survival of the fittest among string with a structured yet randomised information exchange to form a search algorithm with some of the innovative flair of human search. Result of the problem is based on quantitative way.

CPIT 203.Next Generation Server Based Technology

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Abstract: The paper basically deals with the study of Next Generation Server based technology that commits "Reliability, Productivity, Speed and limitless space. This technology provides Computers with 24/7 services with no warnings of storage, no worries of speed and reduces architecture cost in IT sector.
The paper also deals with many new technologies built from server based computing (SBC), often Internet-based. These include server-based gaming, cloud computing, globally distributed computing, grid computing, and many others. The features of using SBC technology are-
1. Server-based Computing solutions enable IT staff to deploy, manage and support applications in minutes, instead of hours—all from a single location.
2. Server-based Computing provides access to virtually any Windows-based application, across any type of network connection to any type of client. Since all applications and data are centralized, users anywhere can gain access to their email, database information, Critical applications, student data, accounting and human resource tools, or the Internet.
3. Server-based Computing solutions provide bandwidth-independent performance for students, faculty and administrators, regardless of how they access academic resources. Since application activity occurs on the server, users get blazing speed over the existing LAN.
4. With server-based computing, the security of academic applications and data is dramatically improved since all vital information is kept on a centralized server.

CPIT 204.Novel Approach for Fast and Secured Image Transfer Using Chaotic Maps

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Abstract: In present era all the multimedia communication is done over open network such as images,videos,text e.t.c, So the security is also a major concern. In this research we proposed an image encryption algorithm by the help of chaotic map as it is well known for its Dynamic nature,Randomness and very sensitive towards initial condition. In the proposed algorithm two chaotic map and the two secreat keys for encryption of image are used in which first we divide the image into four blocks and then each block of the image is encrypted individually in n ways like key1-chaotic map1, key2-chaotic map2, key2-chaotic map1, key1-chaotic map2 repeat this procedure upto n times. Although the experimental result by Key sensitivity test,Statistical analysis,Differential attack analysis,Fips-140 test make the algorithm good enough for real time secure communication.

CPIT 205.NOVEL APPROACH OF SOLVING OPTIMIZATION PROBLEM: REINFORCED GENETIC OPERATOR

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Abstract: In this paper we are going to use a novel approach of "Genetic CrssOverOperator " and then use the approach with some changes made to them by adding knowledge to solve "Travelling Salesman Problem" which is a NP-hard problem studied in operations research and theoretical computer science and stated as" Given a list of cities and the distances between them, the task is to find the shortest possible route that visits each city exactly once and returns to the origin city. It is a special case of the travelling purchaser problem. Till now this problem is solved by using various numerical and statistical optimization techniques

which are complex to understand as well as hard to solve for solving optimization problem .For better understanding the problem in hand we have developed a model for solving the problem with the help of a new genetic algorithm which make use of new crossover operators which are nomenclatured as knowledge Augmented Crossover Operator.We have taken two crossover operators namely Order Crossover operator(OX) and Partially mapped crossover operator(PMX) and knowledge is added to them by always taking the shortest edge in the offspring produced so that for reaching from source to destination our tour always have shortest edge in it and so the Salesman will complete the tour in less amount of time as well.

CPIT 206.On improving the software maintenance of object – oriented Software System

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Abstract: Oriented languages are becoming in use due to the various features like inheritance and polymorphism, which provides great strength. Several new features of object–oriented languages impose some difficulties in maintenance of software. In this paper we have considered the features of dynamic binding, object dependency program structure, and detail code understanding to make future maintenance easy. This will be largely helpful, to analyze and design the system so that future cost of maintenance using object–oriented concept will be low.

CPIT 207.OPTIMALITY OF DEFECT DENSITY VERSUS MODULE SIZE

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Abstract: Defect Density is the number of confirmed defects detected in software component during a defined period of operations divided by the size of the components. Defect Density is used to compare the relative number of defects in various software components. This helps identify candidates for additional testing for possible re-engineering or replacement. Data from several projects show a significant relationship between the size of a module and its defect density. Since total number of defects depends on the module size. So we can find a relationship between defects and module size. In this paper we have formulated a model indicating the relationship between defect density and module size and examined the available data sets and propose a model relating module size and defect density by taking the distinct values of variables and parameter by putting some constraint on parameter's. I have taken different special cases for sketching the graph that shows a relevant relationship between defect density and module size and also we have presented the two models used together provide a way of projecting defect density variation. We have also considered the possibility of minimizing the defect density by controlling module size distribution.

CPIT 208.Performance Evaluation of On Demand Routing Protocols over UDP Connection

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Abstract: Ad-hoc networking allows users to form temporary wireless networks without existing infrastructure. Several routing protocols have been proposed for mobile ad hoc networks and some prominent protocol among them are Ad Hoc on Demand Routing protocol (AODV) and Dynamic Source Routing protocol (DSR). In this paper, a comparison of the performance of these two on demand routing protocols has been done and shows their working. Simulation model having scenario of 30 nodes and 6 UDP connections has been used for comparison of protocols. The results show that even though DSR and AODV have a similar on demand behavior, the differences in the protocol mechanics can lead to significant performance differences.

CPIT 209.Permission-Based Security Models and its Application to Android System

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Abstract: The market for smart phones has been booming in the past few years. There are now over 400,000 applications on the Android market. Over 10 billion Android applications have been downloaded from the Android market. Due to the Android popularity, there are now a large number of malicious vendors targeting the platform. Many honest end users are being successfully hacked on a regular basis. In this work, a cloud based reputation security model has been proposed as a solution which greatly mitigates the malicious attacks targeting the Android market. Our security solution takes advantage of the fact that each application in the android platform is assigned a unique user id (UID). Our solution stores the reputation of Android applications in an anti-malware providers' cloud (AM Cloud). The experimental results witness that the proposed model could well identify the reputation index of a given application and hence its potential of being risky or not.

CPIT 210.Private Cloud approach for State Data Center to deliver e-Governance services

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Abstract: Cloud computing can be used to facilitate real-time e-Governance services to the citizens of India across the length and breadth of the country. As most of the cities , towns and specially rural areas of India are lacking technological infrastructure to offer e-Governance services , cloud computing can be a major boon because it enables quick project execution. Current internet penetration in India is eight percent only and cloud computing if used strategically, can aid internet proliferation substantially. In addition, because of its ability to handle large number of transactions, citizens can look forward to better response times for the

transaction. Cloud computing can contribute in a variety of ways to deliver citizen services efficiently and enable IT resources to be provided on demand, at scale in a multi-tenant, yet secured environment.
For better cloud based application a State Data Centre (SDC) is required to provide common IT infrastructure to host Government applications. The study shows implementation of private cloud approach in SDC with the objective of providing a common enabling infrastructure to the States to consolidate services, applications and infrastructure for efficient electronic delivery of G2G, G2C and G2B type e-Governance services. A case study of some state data centers using private cloud is integrat part of our study and presented in this paper.

CPIT 211.Private cloud deployment to offer UID for e-Governance applications

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Abstract: Providing UID application overview and requirements, the authors observes that cloud computing is fast emerging as the next generation computing paradigm to build and deploy Internet applications targeting large sets of geographically dispersed users.
Further, the utility of cloud computing is in that it facilitates these applications to be deployed and managed in distributed systems across data centers and provide clean abstraction for low level resource and application management. Justifying the rationale of architecting UID Application on the e-Governance Cloud Platform, the authors proposed next generation cloud based e-Governance applications with cloud architected and deployed over cloud computing platform to take advantage of scale and elasticity of the cloud. Given the humongous nature and immense scale of the ambitious UID project, this paper will propose a private cloud deployment to offer UID for e-Governance applications and other governments services .
According to this paper , the UID application will be best suitable if implemented on cloud and help the e-Governance services to offer through cloud platform.

CPIT 212.Process Control Plan for Three Quality Classes: Two-Phase Inspection

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Abstract: In this paper the idea of deferred sampling inspection plan is enlarged for three attribute classes with two phase inspection. This paper presents a two-phase inspection to maintain high quality level of the production processes which are not well-behaved and/or subject to some deterioration. OC and other performance characteristics have been derived and illustrated numerically. Lastly, Poisson unity values have been tabulated to facilitate the operation and construction of the plan.

CPIT 213.Processing time of Database System

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Abstract: Database systems store their data in physical memory and provide very high-speed access. Conventional database systems are optimized for the particular characteristics of disk storage mechanisms. Memory resident systems, on the other hand, use different optimizations to structure and organize data, as well as to make it reliable. This paper provides a brief overview on Database system storage and one of the memory resident systems and compares the processing time of this system with a typical disc resident database based on the results of the implementation of TPC benchmarks environment on both.

CPIT 214.Programmable Logic Controller in context of Industrial Process

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Abstract: Simplification of engineering and precise control of manufacturing process can result in significant cost savings. Flexible automation is the most cost-effective way, which can pay big dividends in the long run. SCADA is widely used in industry for Supervisory Control and Data Acquisition of industrial processes and Programmable Logic Controller is a digital computer used for automation of industrial processes, such as control of machinery on factory assembly lines. This paper describes the Supervisory Control and Data Acquisition of industrial processes (SCADA) and Programmable Logic Controller (PLCs) systems in terms of their architecture, their interface to the process hardware, the functionality and the application development facilities they provide. Some attention has been paid to the industrial standards to which they abide their planned evolution as well as the potential benefits of their use.

CPIT 215.Q-Learning Approach for Intrusion Detection using K-mean Clustering

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Abstract: Network Intrusion detection System (NIDS) is an intrusion detection system that tries to discover malicious activity such as service attacks, port scans or even attempts to break into computers by monitoring network traffic. Data mining techniques make it possible to search large amounts of data for characteristic rules and patterns. If applied to network monitoring data recorded on a host or in a network, they can be used to detect intrusions, attacks or anomalies. In this paper, We proposed “machine learning” a method to cascade K-means clustering and the Q-learning methods to classifying anomalous and normal activities in a computer network. The K-means clustering method first partitions the training instances into two clusters using Euclidean distance similarity. On each cluster, representing a density region of normal or anomaly instances, Q-learning strategies applied for the creation of agents that can adapt to unknown, complex environments. We attempted to create an agent that would learn to explore an environment and collect the malicious within it. We obtained interesting results where agents were able to re-adapt their learning quickly to the new traffic and network information as compare to the other machine learning method such as supervised learning and unsupervised learning.

CPIT 216.Real Time Power Aware Differentiated Routing in Wireless Sensor Network

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Abstract: Wireless Sensor Networks (WSNs) are vastly scattered networks of undersized, lightweight wireless nodes, deployed in huge numbers and they are ad-hoc in nature. Energy saving optimisation and network lifetime are prime concern in the design of WSN as sensor nodes are deployed in different terrains where no source of power supply is available and sensor devices are operated by battery. WSNs Monitors the environment or system by measuring physical parameters such as temperature, pressure, humidity or enemy movements in battle field areas. In all cases, an operational network is required to fulfil the application missions. There are two types of nodes in WSNs, real time nodes which forward time critical data and non real time nodes which forwards non time critical data. Real time sensor nodes often generate data at much higher rate than non real time sensor nodes and thus real time nodes are known to have shorter life time than non real time sensor nodes. Since the main work of sensor nodes is to collect and forward data so the performance of a WSN in terms of its life time greatly depends on the time critical and non time critical data which WSN captures and forwards. In this paper, we address the issue of limited energy in sensor nodes through designing real time power aware differentiated routing in a sensor field with heterogeneous(real time & non real time) sensor nodes. We modelled routing as real time nodes and non real time nodes superimposed on-top of each other which work together to extend the network's lifetime. We propose a route selection algorithm that manages swapping of routing responsibilities between real time data forwarding nodes and non real time data forwarding nodes. If in the event power level of a real time forwarding node falls below the minimum threshold value required to perform successful reception and transmission of real time traffic then our algorithm ensures that non real time nodes provides back-up routing support to the real time nodes. By using this proposed method we can prolong the life time of wireless sensor network.

CPIT 217.Software Development by Requirement Tracebility And CASE Tools

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Abstract: Traceability is one of the essential activities of good requirements management. Traceability is used to ensure that the right products are being built at each phase of the software development life cycle, to trace the progress of that development and to reduce the effort required to determine the impacts of requested

changes. Now a day, system developers are faced to produce complex, high quality software to support the demand for new and revised computer applications. This challenge is complicated by strict resource constraints, forcing management to deploy new technologies, methods and procedures to manage this increasingly complex environment. Often the methods, procedures and technologies are not integrated. Therefore, they achieve less than desired improvements in productivity, or force management to make tradeoff decisions between software quality and developer efficiency. Thus the production lines have to be developed faster, too. A very important role in this development is Software Engineering because many production processes are 'computer aided', so software has to be designed for this production system. It seems very important to do the software engineering right and fast.

CPIT 218.Resource Allocation in Wireless Ad Hoc Networks:A Price-based Approach

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Abstract: The shared-medium multi-hop nature of wireless ad hoc networks poses fundamental challenges to the design of effective resource allocation algorithms that are optimal with respect to resource utilization and fair across different network flows. None of the existing resource allocation algorithms in wireless ad hoc networks have realistically considered end-to-end flows spanning multiple hops. Moreover, strategies proposed in wire line networks are not applicable in the context of wireless ad hoc networks, due to its unique characteristics of location-dependent contention.In this paper, we propose a new price-based resource allocation framework in wireless ad hoc networks to achieve optimal resource utilization and fairness among competing end-to-end flows. We build our pricing framework on the notion of maximal cliques in wireless ad hoc networks, as compared to individual links in traditional wide-area wire line networks. Based on such a price-based theoretical framework, we present a two-tier iterative algorithm. Distributed across wireless nodes, the algorithm converges to a global network optimum with respect to resource allocations. We further improve the algorithm towards asynchronous network settings, and prove its convergence. Extensive simulations under a variety of network environments have been conducted to validate our theoretical claims.

CPIT 219.Routing Protocols on Mobile Ad-hoc Networks: A Survey Paper

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Abstract: Mobile Ad-hoc Network is a type of network with special characteristics like no fixed infrastructure, dynamic topology etc therefore to transmit data efficiently on network routing protocols are used. Main function of routing protocols is to establish a route between nodes so that the data can be delivered to the specific destination. Several routing algorithms have been developed for routing in MANET in the past years. This survey presents the overview of the routing protocols with their characteristics, advantages and disadvantages. The routing protocols are classified on the basis of: proactive, reactive and hybrid approaches. In this paper ad-hoc routing protocols are analyzed and the metrics used to analyze the performance of protocols are throughput, packet delivery ratio, routing overhead and end-to-end delay.

CPIT 220.Secure API Access Control in Clouds Using JV-RBAC Model

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Abstract: As cloud is a rising paradigm of computing, it throws open various challenges and issues. The major issue hindering the growth of recognition of usage of cloud computing is Cloud security. Cloud security is security principles useful to protect data, applications and infrastructure connected within the cloud computing technology. There are many cloud security issues, of which this paper addresses the problem of insecure APIs. APIs act as the boundary between cloud provider and the customer and the security of cloud computing depends basically on the security of these APIs. Hence a strong API access control method is required. Access control, a method for constraining the interface between users and protected resources. Commonly, access control is concerned with controlling which users have access to which resources in computer systems. Role-Based Access control (RBAC) is one of the most powerful access control mechanisms with many possible applications. RBAC models have concerned significant research interest in past time due to their providing some flexibility to secure management and ability to model organizational structure and their capability to reduce organizational expenses. This paper proposes an access control mechanism implemented at the API level using the Joshi Vaisla-Role Based Access Control (JV-RBAC) model, which integrates the authorization of users and roles, and providing higher security by introducing access rules and audit function.

CPIT 221.Secure File Deletion for Linux Operating System

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Abstract: Security conscious users may require that deleted file and its associated meta-data should not be accessible on the underlying physical disk. Existing file system deletion utilities only reset the file system data structures, leaving both the actual data and its associated meta-data on the physical disk. Even when the file blocks have been overwritten, they may remain visible to advanced probing techniques such as magnetic force microscopy (MFM) or magnetic force scanning tunnelling microscopy (STM). So, users require a method by which they can securely delete file. Through this paper, we provide a review and comparison of various techniques that can be used for secure file deletion on Linux Operating System like user-level secure deletion tools, synchronous secure deletion, asynchronous secure deletion, encrypting file information, etc. Comparison is given based on the degree of security provided and CPU time consumption by a particular technique.

CPIT 222.Security Issues in accessing Internet websites through Mobile devices

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Abstract: Mobile security or mobile phone security has become increasingly important in mobile computing. It is of particular concern as it relates to the security of personal information now stored on the smart_phone.
More and more users and businesses use smart phones as communication tools but also as a means of planning and organizing their work and private life via Internet. Within companies, these technologies are causing profound changes in the organization of information systems and therefore they have become the source of new risks. Indeed, smart phones collect and compile an increasing amount of sensitive information to which access must be controlled to protect the privacy of the user and the intellectual property of the company.

All smart phones, as computers, are preferred targets of attacks. These attacks exploit weaknesses related to smart phones that can come from means of communication like SMS, MMS, wifi networks, and GSM. There are also attacks that exploit software vulnerabilities from both the web browser and operating system. Finally, there are forms of malicious software that rely on the weak knowledge of average users.
Different security counter-measures are being developed and applied to smart phones, from security in different layers of software to the dissemination of information to end users. There are good practices to be observed at all levels, from design to use, through the development of operating systems, software layers, and downloadable apps.
In this paper we present issues to use internet websites through mobile devices like Laptops, Palmtops, Cellular Phones as well as desktop PC.

CPIT 223.Security Issues in Pervasive Computing: A Healthcare Scenario

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Abstract: In the past few years, Pervasive Computing applications have grown tremendously because of recent developments in portable, low-cost, lightweight devices with faster short range and low power Wireless Communications networks. Pervasive Computing environment consists of various small, frequently mobile, handheld and portable smart devices connected to an ad-hoc network structure. These devices are fully efficient in sensing the environment around them and reacting intelligently to the changes in user context in order to simplify the user activities. Security issues increase in pervasive computing environments as it provides a user access to computing resources and services from any location and at any point of time. Pervasive computing has become an essential in healthcare because of so many small devices used. The security plays an essential role in this regard. A wide range of research has been carried in pervasive computing. This paper elaborates the security issues in pervasive computing specially in the healthcare field.

CPIT 224.SECURITY ISSUES OF CLOUD COMPUTING - AN ANALYSIS

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Abstract: Cloud computing provides the next generation of internet based, highly scalable distributed computing systems in which computational resources are offered 'as a service'. Although the move toward the Cloud is clear, the shape of the Cloud—it's technical, legal, economic, and security details—is not.
Security and privacy involving storing and securing data, and monitoring the use of the cloud by the service providers is one of the main concerns. The security mechanisms between organization and the cloud need to be robust.
Cloud computing utilizes three delivery models by which different types of services are delivered to the end user. The three delivery models are the SaaS, PaaS and IaaS which provide infrastructure resources, application platform and software as services to the consumer. These service models also place a different level of security requirement in the cloud environment. The main concern of this paper is to analyze the security issues of CLOUD COMPUTING in present scenario.

CPIT 225.Security: Protection of WLANs with the IEEE 802.11

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Abstract:-Wireless Local Area Networks (WLAN) in communication domains, they have provided mobility and have improved the ease of network installation in most areas, such as industry, science, education, medicine and the military. A secure connection to an intranet, which holds critical data and applications, must be the utmost consideration in the effort to protect critical resources. This paper provides an investigation the suitability of the IEEE 802.1X standard to provide the required security framework to WLANs.
Keywords- WLAN, IEEE 802.11, Threats, WEP, MAC.

CPIT 226.Self Replicated Intrusion Detection on Distributed Network

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Abstract:- Network intrusion detection systems (NIDS) continuously monitor network traffic for malicious activity, raising alerts when they detect attacks. However, to accommodate any conceivable situation, a NIDS would need an unlimited supply of CPU cycles and memory. Thus, the operator of the system needs to trade-off the quality of the detection with resource demands. To provide the necessary tuning options, we devise several new mechanisms which allow choosing this trade-off according to the policy of a particular environment. Service Oriented Architecture (SOA) approach, able to operate independently as an anomaly-based NIDS or integrated, transparently, in a Distributed Intrusion Detection System (DIDS). The proposal is innovative, because it combines the advantages of Smart Sensor approach and the subsequent offering of the NIDS functionality as a service with the SOA use in order to achieve their integration with other DIDS components. The main goal of the work is to reduce the huge volume of management tasks inherent to this type of network services, as well as facilitating the design of DIDS whose managing complexity could be restricted within well defined margins.

CPIT 227.Server Load Balancing with Green Computing

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Abstract: Server load balancing is the process of distributing service requests across a group of servers. It addresses several requirements that are becoming increasingly important in networks: increased scalability, high performance, high availability and disaster recovery. However, enterprise servers are a major source of energy consumption. It is known that energy consumption is proportional to load. So there is a huge requirement to improve the energy efficiency of server clusters. This can be done by reducing the power drain of computer systems running below their peak loads. This paper discusses implementation of load balancing along with the feature of green computing. Energy-conscious server switching is used as one approach to improve efficiency of server clusters at low request loads. This is carried out by selecting the minimal set of servers which can suffice the request load at a particular time and switching the rest of the servers to a low power state. Then, load balancing is applied to the set of active servers thereby minimizing power consumption.

CPIT 228.Soft Set Model for Sequential Pattern Mining

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Abstract: A number of algorithms are reported in the literature on sequential pattern mining under deterministic conditions. These algorithms suffer from a problem of under prediction and over prediction of patterns due to various reasons. Rough sets and fuzzy sets are being used to address the issues of uncertainty in sequential pattern mining. However fuzzy set and rough set had not been completely successful in addressing these issues in sequential pattern mining. In view of above an attempt has been made in this paper to develop soft set approach for mining sequential patterns. The approach has been illustrated with the help of the suitable example. The results obtained are compared with those obtained by fuzzy set approach and traditional approach of sequential pattern mining.

CPIT 229.AN OVERVIEW OF DATA MINING

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Abstract: The rapid progress of computers and databases has enable companies to store data about future use. The sheer amounts of data to be analyzed in order to make better decisions require dramatically improved new automated data modelling technologies. A concept of Data Mining is developed. There are two foundation of using data mining techniques: the availability of large amount of data and the data mining modelling techniques. In this paper I have explained the whole overview of Data Mining, that comprises all the techniques used,all the real time and the actual applications that are possible and through which some of the companies have made tremendous growth. In my paper I have written everything right from the history of data mining to the future prospects

CPIT 230.Software Engineering With Reusable Component

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Abstract: Reusability is the likelihood a segment of source code that can be used again to add new functionalities with slight or no modification. Reusable modules and classes reduce implementation time, increase the likelihood that prior testing and use has eliminated bugs and localizes code modifications when a change in implementation is required. Subroutines or functions are the simplest form of reuse. A chunk of code is regularly organized using modules or namespaces into layers. Proponents claim that objects and software components offer a more advanced form of reusability, although it has been tough to objectively measure and define levels or scores of reusability. Reusability implies some explicit management of build, packaging, distribution, installation, configuration, deployment, and maintenance and upgrade issues. If these issues are not considered, software may appear to be reusable from design point of view, but will not be reused in practice. This paper presents an empirical study of the software reuse activity by expert designers in the context of object-oriented design. Our study focuses on the three following aspects of reuse : [1] the interaction between some design processes, e.g. constructing a problem representation, searching for and evaluating solutions, and reuse processes, i.e. retrieving and using previous solutions, [2] the mental processes involved in reuse, e.g. examplebased retrieval or bottom-up versus top-down expanding of the solution, and [3] the mental representations constructed throughout the reuse activity, e.g. dynamic versus static representations.

CPIT 231.Software Testing: A Hierarchical Approach

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Abstract:Software testing is as old as the hills in the history of digital computers. The testing of software is an important means of assessing the software to determine its quality. Since testing typically consumes 40~50% of development efforts, and consumes more effort for systems that require higher levels of reliability, it is a significant part of the software engineering. With the development of Fourth generation languages (4GL), which speeds up the implementation process, the proportion of time devoted to testing

increased. As the amount of maintenance and Software testing consists of the dynamic verification of the behavior of a program, defines testing as "the process of executing a program with the intent of finding errors". According to Testing has gone through considerable state of modernization during last decade and there is still a tendency to move it farther upstream in the development process.
Since testing is the phase which is heavily relied by different development phases to ensure software quality, so this work focus more on the improvements in the testing phase of software development which is the process of executing software to assure its correctness with respect to specification. Test case management strategy proposed in this work provides a way of linking faults to the defects which is so, far a dark area in the field of software engineering. It is always difficult to claim with surety about the quality of the software and that it will never fail during its real time execution. Another concern in software development is to reduce the time to market of products. By using the test case structuring technique used in this thesis we can effectively prioritize test cases to overcome such problems up to a certain extent.

CPIT 232.Solid-waste management

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Abstract:-The management of municipal solid waste has become an acute problem due to enhanced economic activities and rapid urbanisation. Increased attention has been given by the government in recent years to handle this problem in a safe and hygienic manner. In this regard, Municipal Solid Waste Management (MSWM) environmental audit has been carried out for Guna city through the collection of secondary data from the government agencies, and interviewing stakeholders and field surveys. Field survey was carried out in seven wards (representative samples of the city) to understand the practice and the lacuna. **T**otal 30-33 tonnes of garbage is collected and disposed off daily in the city. **In** this paper, two methods are used for solid waste management:

- Open dumping Landfills

CPIT 233.Analyzing role of software characteristics for quality improvement

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Abstract: Software quality has a great impact on individuals as well as on society. Through this paper issues related to software quality and its characteristics have been analyzed. Further look-up action on the role of software characteristics for improving the quality has been performed. In majority of cases

people understand quality, appreciate quality but not able to express quality. Many author(s) define the quality as a different meaning like: Conformance of requirements, Fitness for the purpose, Levels of satisfaction etc. Bug deficiency in the program is also the part of our study to improve quality. Through this paper study on critical parameters like Usability, Scalability and planning perspective on which quality stands in the market has been performed. This paper will be finally concluded by emphasizing some critical aspects in improving the software quality.

CPIT 234.Study and Analysis of behavior of programmer capability cost driver and its effects

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Abstract: - Cost estimation is the important part of every type projects management. Accurate cost estimation helps us complete the project within time and budget. Software development and control involves the use of quantitative software estimation and assessment models that are supported by theory and collected historical project data. Numerous models have been developed in the last years that predict software cost and schedule at an early stage of the development life cycle. In this research paper we have analyzed the behavior of programmer capability and see, how it can be affected the cost of any new project.
The main aim of this research paper is to provide a complete knowledge of programmer capability cost drivers which is very helpful for both new researchers and developers. For predict the accurate result we have used a web based online tools AGILE COCOMO II software cost estimation models.

CPIT 235.Study of Artificial Neural Networks in the field of Disaster Mitigation

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Abstract: ANN (Artificial Neural Network) will provide a methodology for solving many types of non-linear problems that are difficult to solve by traditional techniques. Artificial neural networks are parallel computational models, comprising closely interconnected adaptive processing units. The neural networks having adaptive nature, where 'learning by example' is efficient to tackle the problems those are non linear in nature and replaces traditional programming. It makes the ANN techniques very appealing in field of domains for solving highly nonlinear phenomena. We study the works done using ANN in the field of disaster mitigation. Natural Disasters like earthquakes, floods, cyclones and landslides have become of common occurrence in the region, repeatedly taking a heavy loss of life and property. Rapid advancement of technology in all these sectors could be deployed in efficiently tackling the challenges emerging from disasters, minimizing the impact of disasters. The objective of our research is to better

forecast the disasters through the use of neural network models and it can minimize the effects of disaster in the region.

CPIT 236.Study of Document Clustering Results Using Hesitant Fuzzy Sets

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Abstract: This Paper Presents Hesitant Fuzzy Information About Data Sets. Dual Hesitant Fuzzy Set (DHFS) is used in terms of two functions that return two sets of membership values and non membership values for each element in domain. Hesitant Fuzzy Linguistic Term Set (HFLTS) is based on the fuzzy linguistic Approach that will serve as basis to Increase the flexibility of elicitation of linguistic Information. For experimental Clustering results analysis evaluated using the Analytical SAS 9.0 Software is used. The Experimental Clustering Results show the proposed approach Best performs.

CPIT 237.A study of Router 1x3 Design

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Abstract: A router is a packet based protocol. Router drives the incoming packet which comes from the input port to output ports based on the address contained in the packet. The router has a one input port from which the packet enters. It has three output ports where the packet is driven out. The router has an active low synchronous input reset which resets the router. Packet contains 3 parts. They are Header, payload and parity. Packet width is 8 bits and the length of the packet can be between 1 bytes to 63 bytes. Destination address of the packet is of 2 bits. The router drives the packet to respective ports based on this destination address of the packets. Each output port has 2-bit unique port address. If the destination address of the packet matches the port address, then router drives the packet to the output port. The address "3" is invalid. Length: Length of the data is of 6 bits and from 1 to 63. It specifies the number of data bytes. A packet can have a minimum data size of 1 byte and a maximum size of 63 bytes.

CPIT 238.Study of some Cryptographic Data Protection Techniques

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Abstract: Data Communication is the movement of information from one point to another point by means of optical or electrical transmission medium. Today every person prefers to communicate using the wireless technology. The communication can be made possible through the Bluetooth as well as using Internet. But the major importance must give to the data security and must protect from the unauthorized access. The cryptography is the art of secret writing and gives the ability to send information between participants in a way that prevents others from reading it. This paper gives the overview of some data protection techniques based on the Cryptography.

CPIT 239.Survey of Fault Tolerance Strategies in MPLS Networks

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Abstract: MPLS is a packet-forwarding technology which uses labels to make data forwarding decisions. When fault occur in active LSP, the recovery scheme must forward the affected traffic to the recovery path which forward the fault. The two fundamental recovery mechanism defined by IETF used to forward affected traffic is rerouting and protection switching. The main focus of this paper is to introduce a survey of various fault recovery schemes proposed for MPLS networks based on rerouting and protection switching. This paper elaborates the different aspect of various fault recovery schemes like limitation, efficiency, on which recovery scheme (protection switching or rerouting) they are based on. The review recovery mechanisms are classified according to the set of characteristics considered relevant. I also suggest improvement (if possible) for recovery schemes.

CPIT 240.TEXTIO BASED IMPLEMENTATION OF A DIGITAL CIRCUIT

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Abstract: In this paper an attempt has been made to reduce the testing time which is the demand of the existing VLSI technology and hence speed up the process before the fabrication of IC's. An architecture has been proposed for a digital circuit in order to perform input and output operation in text files using TEXTIO concept by which we will speed up verification process.

CPIT 241.The Automatic Text Summarization System : A Comparative Approach

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Abstract: Text Summarization is a challenging problem these days. Due to the great amount of information we are provided with and thanks to the development of Internet technologies, needs of producing summaries have become more and more widespread. Summarization is a very interesting and useful task that gives support to many other tasks as well as it takes advantage of the techniques developed for related Natural Language Processing tasks.

We present a comparative study of Automated Text Summarization Systems. The field of Text Summarization (TS) has experienced an exponential growth in the last years. That's why many comparative studies can be found in the literature. Among the most interesting, Paice(1990), Spark-Jones (1999), Radev (2000), Maybury and Mani (2001). Also the SUMMAC and DUC contests provide a good overview of current working system. Most of the comparative studies are divided in two parts: first, an account of factors influencing summaries is given. Then a classifications of summarization. In this study, we present the factors affecting of summarization, and the characteristics of each of them and the way they would be classified in each of the three classification presented.

This paper focuses on implementation and improvement of the existing MEAD ALGORITHM and Bayesian Classifier for Multi document summarization using Timestamp and the Frequent document concepts and found that summarization using Bayesian Classifier takes lesser time for the same set of inputs.

CPIT 242.The extensive performance with the indexes

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Abstract: New application areas, such as location-based services, rely on the efficient management of large collections of mobile objects. Maintaining accurate, up-to-date positions of these objects results in massive update loads that must be supported by spatial indexing structures and main-memory indexes are usually necessary to provide high update performance. Traditionally, the R-tree and its variants were used for indexing spatial data, but most of the recent research assumes that a simple, uniform grid is the best choice for managing moving objects in main memory. We perform an extensive experimental study to compare the two approaches on modern hardware.

As the result of numerous design-and-experiment iterations, we propose the update- and query-efficient variants of the R-tree and the grid. The experiments with these indexes reveal a number of interesting insights. First, the coupling of a spatial index, grid or R-tree, with a secondary index on object IDs boosts the update performance significantly. Next, the R-tree, when combined with such a secondary index, can provide update performance competitive with the grid. Finally, the grid can compete with the R-tree in terms of the query performance and it is surprisingly robust to varying parameters of the workloads. In summary, the study shows that, in most cases, the choice of the index boils down to the issues such as the ease of implementation or the support for spatially extended objects.

CPIT 243.THE FUTURE OF E-COURTS – Use of AI tools to make judicial process easier.

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Abstract: In Indian scenario, we are still in the transformation phase from manual to electronic data processing. Electronic governance or e-governance is an effective tool to handle various public-administration tasks electronically. It is a balanced combination of simple, moral, responsive and transparent governance and IT tools and techniques. We already have National E governance plan working from June 2006 to implement ambitious E governance plans and projects in various Indian states.

However a lot of scope is still there to do more and to imply IT in various governmental departments and domains. In the same sequence we can use artificial intelligence along with cloud computing to improve Indian Judicial system. Or we can say that the concept of e-courts can be enhanced by implying AI tools and techniques. The judiciary is in the early stages of a transformation in which AI (Artificial Intelligence) technology will help to make the judicial process faster, cheaper, and more predictable without compromising the integrity of judges' discretionary reasoning. How can AI contribute to a process that encompasses such a wide range of knowledge, judgment, and experience? Rather than aiming at the impossible dream (or nightmare) of building an automatic judge, AI research has had two more practical goals: producing tools to support judicial activities, including programs for intelligent document assembly, case retrieval, and support for discretionary decision-making; and developing new analytical

tools for understanding and modeling the judicial process, such as case-based reasoning and formal models of dialectics, argumentation, and negotiation.
Judges, squeezed between tightening budgets and increasing demands for justice, are desperately trying to maintain the quality of their decision-making process while coping with time and resource limitations. Flexible AI tools for decision support may promote uniformity and efficiency in judicial practice, while supporting rational judicial discretion. In this paper we are trying to emphasize various AI tools and techniques which will certainly help our judges in their critical reasoning, analysis and decision making activities and will make the complicated judicial process far more easier,shorter,cheaper and effective.
Keywords: Artificial Intelligence, Cloud Computing, e-courts, intelligent document assembly, case retrieval, analytical tools, and case based reasoning, formal models of dialectics, argumentation and negotiation.

CPIT 244.The issues of Health-Informatics in the Changing Environment: Uttarakhand Scenario

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Abstract: The applications of e-health can disseminate the health Informatics across the globe. This paper raises the unidentified issues of e-health in Uttarakhand. In this paper we have projected the scope of health informatics in uneven geographical conditions. It refers to health services and information delivered or enhanced through the internet and related technologies. In general e-health is not a technical development but also a state of mind, a way of thinking an attitude, and a commitment for networked, global thinking, to improve health care locally, regionally and worldwide by using information and communication technology.

CPIT 245.THE REAL TIME WIRELESS SENSOR NETWORK FOR HEART BEAT MONITORING USING ZIGBEE MODULE

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Abstract: In this system using the features and technology of wireless sensor networks such as distributed and self-organization to build Heartbeat monitoring system, which can monitor the Heartbeat of human in real time. This system applies RF communication protocol and uses the 2.4 GHZ Zigbee as RF transceiver. It has the characteristics of low power consumption, low cost, flexible structure and accurate measurement, and it can achieve the long- distance Heartbeat monitoring of human in real time. The wireless Heartbeat sensor node senses and transmits the variations in the human Heartbeat to the central computing unit within the range. The central computing unit receives the data and stores it in the file and plotting the variations simultaneously. The result are displayed in matlab. The system achieved heartbeat within the distance of 100 meters approximately and are successful to remove all wired logic for monitoring. this paper proposes a solution to upgrade existing health monitoring systems in hospitals by providing remote monitoring capability.

CPIT 246.Advantages of Cloud Computing to offer e-Governance Service

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Abstract: Cloud computing is a disruptive technology model that is changing the way public sector organizations like Government offices , health care or education that are following information and communications technology (ICT), and it help in future to deploy and deliver services to stakeholders in a hassle free manner . A trusted network infrastructure is the foundation for any successful cloud implementation. This paper briefly reviews the status of cloud computing in e-government, e-education, and healthcare organizations. It also helps to analyze the business case for a cloud implementation by summarizing the chief advantages and business drivers. Case study snapshots describe how public sector organizations have successfully implemented cloud services models in various environments worldwide.

CPIT 247.Uniform Repeated insertion of watermark in 3D Object

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Abstract: The objective of proposed watermarking scheme is not only to protect data from unauthorized use but also to maintain the quality of watermark object at an acceptable level. The proposed watermarking scheme is also able to find the region of tampering i.e. algorithm is able to locate a region of change. A powerful watermarking which is resistant against different topological /geometrical modification is difficult to design. The proposed Non-blind watermarking scheme calculates the center of mass of the 3D model. Cryptographic hash function is applied to find the sequence of bits of watermark to be inserted. The watermark is inserted in each of the segments of 3D model so that authentication may be done through any of the segment.

CPIT 248.Uses of silicon and nanotechnology in IC industries

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Abstract: Now a day's integrated circuit are used in virtual electronics equipment and create a revolution worldwide. In IC industries silicon technology and nanoelectronics play a major important role in the future of IC industries. In this abstract discussed about the mutual interaction between silicon and nanotechnology. Silicon semiconductor technology will continue to shrink. But there's an increasing performance gap between device technology and its ability to deliver performance in proportion to device density. There are many failure mechanisms for Si CMOS that are activated by high temperature, so if the temperature gets too high, the chip fails rather quickly. This temperature constraint translates into a power

density constraint that may be mitigated somewhat by cooling innovations, but ultimately requires a trade-off between circuit density and speed. Maximum speed and maximum density cannot be used simultaneously without endangering the lifetime of the chip

CPIT 249.Vehicular Ad Hoc Network Implementation: Issues

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Abstract: Vehicular ad hoc networks are receiving a lot of attention due to the wide variety of services they can provide. Their applications range from safety and crash avoidance to Internet access and multimedia. A lot of work and research around the globe is being conducted to define the standards for vehicular Communications. These include frequency allocation, standards for physical and link layers, routing algorithms, as well as security issues and new applications. In this research we review the standardization work and researches related to vehicular networks and discuss the challenges facing future vehicular networks as well as the issue for implementing vehicular ad hoc network.

CPIT 250.Verification of k-means clustering technique to interpret Cloudburst over Leh

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Abstract: Data warehousing and Data Mining have been proved to be convincing and promising techniques for extraction of knowledge from huge datasets. Data mining has been popularly used extensively in various business applications for last few years. In this paper, another application of data mining that has a significant societal effect has been addressed. Every year, cloudbursts over hilly areas and coastal regions cause loss of lives and property. The forecasting and warning of these events is very difficult. The warning of cloudburst could only be provided at a small lead time say a few hours in advance based on the interpretation of latest satellite imagery data, powerful radar (Doppler category), if available, or by using Model Output Statistics (MOS) models.
We have demonstrated that Data Mining when applied on the colossal data of Numerical Weather Prediction (NWP) model outputs, generates significant patterns conducive to formation of Cloudburst phenomenon. A recent case of Cloudburst over Leh that caused a huge loss has been analyzed using k-means clustering technique. It has been observed that with the mining of NWP model forecast data, the signals of formation of cloudburst can be found 5-6 days in advance. This has also been verified by generating clusters of vertical wind motion for the forecast on days other than days of occurrence of cloudburst.

CPIT 251.WEB CLEANING: A STUDY OF J-TIDY/JS-BEAUTIFIER TOOL

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Abstract: JavaScript is widely used to provide client-side functionality in Web Applications. **JavaScript** is a lightweight, interpreted, object-oriented language with first-class functions, most known as the scripting language for Web pages. The JavaScript language is intended to be used within some larger environment, be it a browser, server-side scripts, or similar. JavaScript is widely used in web-based applications and is increasing popular with developers. So-called browser wars in recent years have focused on JavaScript performance. So the developers focuses on JavaScript performance rather than its formatting style, code and document .There is tools available for formatting the code JavaScript is called JS-Tidy. This paper will focus on introducing the new tools which provides some new type of validation and formatting the unformatted JavaScript code.

CPIT 252. WEB CLEANING: ISSUES AND REVIEWS OF PHP TIDY

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Abstract: In present years the enhance of the World Wide Web exceeded all opportunity.World Wide Web includes HTML, Web Browser,Web Server etc.HyperText Markup Language (HTML) is the markup language for displaying web pages and to display other information in a web browser.When editing HTML page it may happen that an HTML tags are duplicated, unformatted, or empty. It would be good if there is a simple way to fix these mistakes automatically by cleaning and formatting HTML page into nicely layered out markup. This paper will focus on familiarising the new Tidy extension included as part of the PHP5 and onwards versions and how it can be used to make working with and generating properly-formed HTML in a quick and efficient manner. PHP Tidy is a great tool for tidying an HTML page.This paper will also focus on issues regarding Tidy and some solutions to these issues.

CPIT 253.Domain based knowledge acquisition and text mining

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Abstract: In many knowledge intensive applications, it is necessary to have extensive domain-specific knowledge in addition to general-purpose knowledge bases. This paper presents a methodology for discovering domain-specific concepts and relationships. The knowledge is infinite and no matter how large a knowledge base is, it is not possible to store all the concepts and procedures for all domains. Even if that were possible, the knowledge is generative and there are no guarantees that a system will have the latest information all the time. And yet, if we are to build common-sense knowledge processing systems in the future, it is necessary to have general-purpose and domain-specific knowledge that is up to date. After the domain specific data is collected from various sources, it is necessary to parse the data and serialize it so that it can be used by the domain specific application and some meaningful analytics can be performed.Finding patterns in data is only useful if the patterns can be meaningfully interpreted in the context of the domain applications. The paper will also discuss models for effective mining of "text" data for classification, regression, time-series analysis, prediction, clustering, summarization, defining association rules, sequence discovery and visualization of data(in some cases).

CPIT 254.MICROPROCESSORS: BRAIN OF THE COMPUTERS

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Abstract: A microprocessor is a multipurpose, programmable device that accepts digital data as input, processes it according to instructions stored in its memory, and provides results as output. It is an example of sequential digital logic, as it has internal memory. Microprocessors are sequentially accessed (means they have a memory storage device in it).they operate on numbers and symbols represented in binary numeral system. These are generally used for the purpose of computation, editing, multimedia, display and communication over the internet. Many more microprocessors are part of embedded systems, providing digital control of a myriad of objects from appliances to automobile to cellular phones and industrial process control.

CPIT 255.An optimal solution for All Pair Shortest path problem using ACO

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Abstract: Ant Colony optimization is a metaheuristic approach. It is widely used in Search space related problem. ACO is the branch of Swarm intelligence, which is based upon the collective behavior of social insect. Swarm intelligence is the paradigm for complex problem, various search related problem has been solved using swarm intelligence. This paper is focused on to find optimal solution for all pair shortest path using ACO and comparative analysis with traditional algorithm. This paper aims to provide an efficient approach for shortest path problem.

CPIT 256.Disadvantages of Cloud Computing

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Abstract: Cloud Computing is emerged as one of the most influential paradigm of IT Industry. Cloud Computing affects people, process and technology of the enterprise. Benefits with Cloud computing paradigm are huge such as efficiency, flexibility, easy set up and overall reduction in IT cost, but as it is said that "with great advantages comes a great disadvantage". This is with heart and soul true for Cloud computing. Even with its huge benefits of we cannot ignore its acute disadvantages. Aim of this paper is not to criticize but to make awareness so that this emerging paradigm becomes a perfect computing resource.

CPIT 257.Cloud & Grid Computing: Similarities and Differences

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Abstract: Field of computers is doing day by day progress as it is getting blessed with the concepts of Distributed Computing, Parallel Computing, Grid computing and Cloud Computing. Main focus of this paper is to find out differences and similarities between cloud and grid computing. In this paper we find out what these two paradigms are, which one is better, their common problems and many more. We also put light on the future on both of these paradigms.

CPIT 258.Modelling of Rayleigh Fading Networks in a Cross-Layer Way

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Abstract—This paper addresses Rayleigh fading networks, and in particular, wireless ad-hoc and sensor networks over Rayleigh fading channels. First, we will model Rayleigh fading networks and show how to map the wireless fading channel to the upper layer parameters for cross-layer design. Based on the developed fading network model, we will consider two scarce resources of wireless networks, namely energy and medium, and develop a cross-layer way to improve their efficiency. In particular, we will first study the energy-efficiency and introduce a new parameter, Energy Cost Factor, as the counterpart of Transport Capacity in wireless transmission. The new parameter will be used to design energy-efficient networks. As to the medium resource, we will bring forward the Medium Resource Space, which not only organizes various medium resources in a systematic way but also considers a third dimension related to space reuse and internode interference. Finally, we will give a general discussion on the cross-layer design and show how power control and route selection jointly contribute to improving the resource efficiency. A few particular routing algorithms will also be studied in detail.

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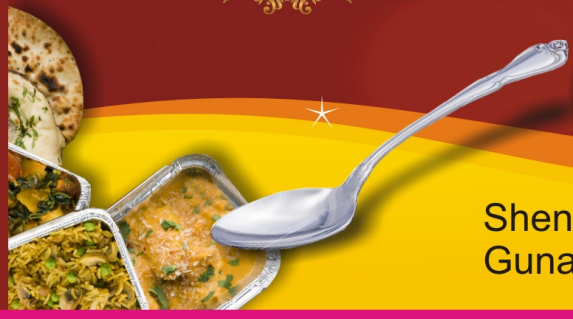

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