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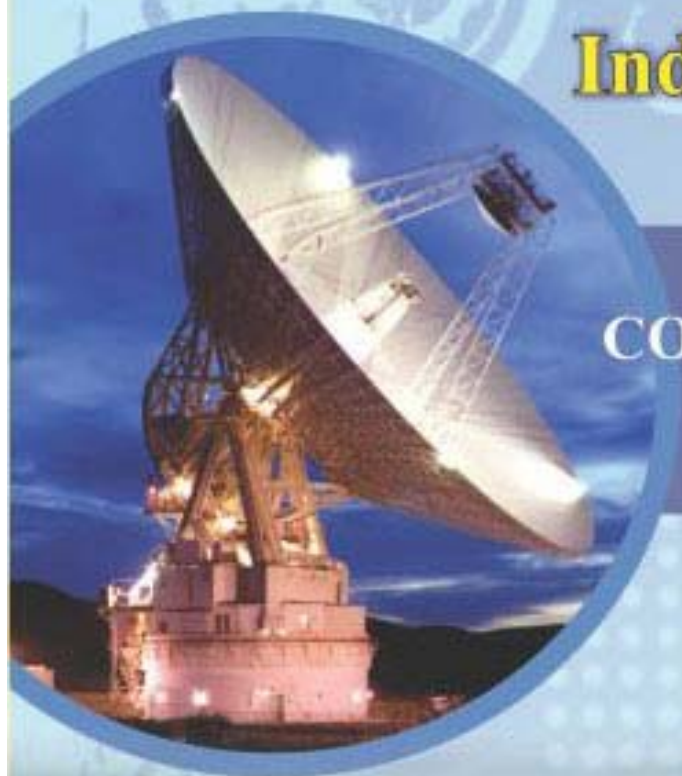
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SECTION OF

INFORMATION AND COMMUNICATION SCIENCE & TECHNOLOGY

(INCLUDING COMPUTER SCIENCES)

President
Dr. L. Joyprakash Singh

The Indian Science Congress Association

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BHUBANESWAR, 2012

PART II

SECTION OF
INFORMATION AND COMMUNICATION SCIENCES
& TECHNOLOGY (INCLUDING COMPUTER
SCIENCES)

President: Dr. L. Joyprakash Singh

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99th Indian Science Congress

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I

PRESIDENTIAL ADDRESS

Dr. L. Joyprakash Singh

Computer Ethics and Society Today

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Over the last five decades, we have seen a huge change in computer technology. Even within the last few years, the computer has brought our lives a visible change tremendously - education systems, social lives and happenings, business application, record keeping by government agencies, and their data analysis etc. Such changes can affect our society, privacy, jobs and perhaps our freedom. This technology will continue to move forward, enhance and support human values. But it will not make our lives simple. The effects of technology are always mixed. It has raised complex ethical, legal and social issues. With the improvement of computer technology and its digital convergence, we could always argue endlessly over the meanings of terms like freedom of expression, security, privacy, or ownership. To give a thought and its understanding of societal issues of computer ethics we need to have some understanding of how computing has developed in the society.

Brief History of Computer

"Computer" was originally a job title: it was used to describe those human beings whose job was to perform the repetitive calculations required to compute such things as navigational tables, tide charts, and planetary positions for astronomical almanacs. Historically, the first computing was done with simply fingers and toes. These were simple tools used for counting. As calculation became more complex, other tools began to be used to leverage the calculating load. This technology developed along the lines of sticks and stones, and then the abacus. The abacus was an early aid for mathematical computations. The purpose of this machine was to calculate numbers for use in mathematical tables. Its only value is that it aids the memory of the human performing the calculation.

The first mechanical computer was invented by Charles Babbage (1791-1871). In the early 1820s, he began his work on a model of a machine which he called the Difference Engine. Herman Hollerith was another nineteenth century inventor who,

unlike Charles Babbage, actually did use punched cards in computing. He designed a machine for the 1890 U.S. Census that, through a combination of the use of electricity and information punched into cards, greatly increased the speed with which census data could be tabulated.

Table -   1*:A list of few machines produced during 19th century is given below:

1936 -	Zuse Z1 invented by Konrad Zuse of Germany.
1942 -	Atanasoff-Berry Computer, simply ABC Computer by John Atanasoff and Clifford Berry of US.
1944 -	Colossus Mark 1 (UK).
1944 -	Harvard Mark - I by Howard Aiken and Grace Hopper at Harvard University, US.
1946 -	ENIAC (an acronym of ENIAC stands for "Electronic Numerical Integrator and Computer") invented by John W. Mauchly and J. Presper Eckert. This was the first electronic computer began operating at the University of Pennsylvania in 1946.
1950 -	First Analog Computer at the Indian Statistical Institute (ISI), Kolkata
1951 -	UNIVAC Computer by John Presper Eckert & John W. Mauchly.
1953 -	IBM 701 EDPM Computer. IBM enters into 'The History of Computers'.
1954 -	IBM FORTRAN Computer Programming Language, this first successful high level programming language, by John Backus.
1954 -	India's First digital computer - HEC-2M developed by A.D. Booth at Birbeek College, London for ISI.
1955 -	HEC-2M operational at ISI in August.
1958 -	URAL from the Soviet Union through the United Nation's Technical Assistance for ISI.
1961 -	India's first commercial computer installed by ESSO Standard Eastern Inc., Bombay (Mumbai)
1962 -	MIT Spacewar Computer Game, The first computer game invented, by Steve Russell.
1962 -	India's first indigenous computer TIFRAC (Tata Institute of Fundamental Research Automatic Computer) developed by TIFR using HEC-2M.
1963 -	IBM 1620 installed at IIT, Kanpur.
1964 -	Computer Mouse and Windows by Douglas Engelbart.
1969 -	ARPAnet, the original Internet.
1970 -	Intel 1103 Computer Memory, the world's first dynamic RAM chip.

1971 - Intel 4004 Computer, the first microprocessor, by Faggin, Hoff and Mazor.

1973 - The Ethernet Computer Networking by Robert Metcalfe and Xerox.

1975 - The first personal computer (PC) appeared on the market. It was sold as a kit through Popular Electronics magazine. It enabled programming through the use of the BASIC language.

1976 - Steve Jobs and Steve Wozniak built the first Apple computer.

1976 - TheCray-1, the first supercomputer, was built by Cray Research.

1977 - Bill Gates and Paul Allen founded Microsoft.

1977 - PCs manufactured by Tandy and by Commodore appeared on the market.

1991 - Param 8000, India's first supercomputer, developed by C-DAC.

*Italicize information are from http://sangrur.nic.in/html/nic_sangrur.html

The Ethics and its meaning

According to Webster's Third International Unabridged Dictionary of the English Language, Ethics is defined as "the discipline dealing with what is good and bad or right and wrong or with moral duty and obligation." Thus one can say, Ethics is a part of philosophy, not science. Philosophy, on the other hand, does not place limitations on our knowledge. It deals with questions of quality, not quantity. It is not so much concerned with measuring amounts of things as it is with understanding ideas and concepts. Hence, ethical judgments are no different in the area of computing from those in any other area. Computers raise problems of privacy, ownership, theft, and power, to name but a few. For example, Computer ethics can be grounded in one of four basic world-views: Idealism, Realism, Pragmatism, or Existentialism. Idealists believe that reality is basically ideas and that ethics therefore involves conforming to ideals. Realists believe that reality is basically nature and that ethics therefore involves acting according to what is natural. Pragmatists believe that reality is not fixed but is in process and that ethics therefore is practical (that is, concerned with what will produce socially-desired results). Existentialists believe reality is self-defined and that ethics therefore is individual (that is, concerned only with one's own conscience). Idealism and Realism can be considered ABSOLUTIST worldviews because they are based on something fixed (that is, ideas or nature, respectively). Pragmatism and Existentialism can be considered RELATIVIST worldviews because they are based or something relational (that is, society or the individual, respectively).

Thus ethical judgments will vary, depending on the judge's world-view. Some examples:

First consider theft. Suppose a university's computer is used for sending an e-mail message to a friend or for conducting a full-blown private business (billing, payroll, inventory, etc.). The absolutist would say that both activities are unethical (while recognizing a difference in the amount of wrong being done). A relativist might say that the latter activities were wrong because they tied up too much memory and slowed down the machine, but the e-mail message wasn't wrong because it had no significant effect on operations.

Next consider privacy. An instructor uses her account to acquire the cumulative grade point average of a student who is in a class which she instructs. She obtained the password for this restricted information from someone in the Records Office who erroneously thought that she was the student's advisor. The absolutist would probably say that the instructor acted wrongly, since the only person who is entitled to this information is the student and his or her advisor. The relativist would probably ask why the instructor wanted the information. If she replied that she wanted it to be sure that her grading of the student was consistent with the student's overall academic performance record, the relativist might agree that such use was acceptable.

Computer ethics in the broadest sense can be understood as that branch of applied ethics which studies and analyzes such social and ethical impacts of information technology. Computer ethics is a new branch of ethics that is growing and changing rapidly as computer technology also grows and develops. The term "computer ethics" is open to interpretations both broad and narrow.

Thus, the subject of ethics is basically based on individuals. It is we, who tend to be unethical with the use of computers and the machine is not to be blamed whatsoever. We are in every way responsible for any outcome that may arise by way of misuse. Throughout most of the history of the human race, right and wrong were relatively easy concepts. Each person was born into a particular social role, in a particular society, and what to do in any situation was part of the traditional meaning of the role. This simple view of ethics was destroyed about 200 years ago, most notably by Immanuel Kant (1724-1804). Kant is in many ways the inventor of the 20th Century.

He rejected the ethical force of tradition, and created the modern idea of autonomy. Along with this radical idea, he introduced the centrality of rational thought as both the glory and the obligation of human beings. There is a paradox in Kant: Each person makes free, autonomous choices, unfettered by outside authority, and yet each person is compelled by the demands of rationality to accept Kant's ethical principle, the Categorical Imperative. This principle is based on the idea that what is ethical for an individual must be generalizable to everyone.

In a world which is dominated by Computer s and its associated technology, Computer Ethics is the need of Society. While Computer Ethics cannot be forced or thrust upon, it is much needed to be followed by Society. Society needs to thrive on the good effects that computers usher in. But if there are no computer ethics followed this will be detrimental for the growth of Society. Social issues can be solved easily using computer technology as it makes living much easier and simpler. However, while computers has made life much more comfortable, it has made the society more vulnerable to intrusion of privacy, threats to security and also made it susceptible to exploitation of all kind. While misuse of social networks has intruded the privacy of many and threatened security of many, some have misused their knowledge of computers for their monetary gains. Viruses are being created so that anti-viruses can be sold , hackers are encouraged , bank accounts swiped out , cyber cafes misused by youth for browsing banned sites and many evils have crept in because of the absence of computer ethics.

The old saying "Honesty begins at Home" is very much applicable to "Computer Ethics" which also should begin at home. Children are nowadays obsessed with computer games rather than being responsible with their studies. Outdoor sports have taken a back seat and we can hardly find children playing a simple game of "Hide and Seek". Again, in homes where there is no monitoring of the children by parents, children misuse the internet. In fact, many children are now prone to depression and suicidal acts because of the ill-effects of the internet. It is therefore the responsibility of the elders at home to educate children to be accountable for what they do. Use of Computers cannot be banned but the importance of the proper and right use of computers can be taught. This is how "Computer Ethics" can start as children are always our future generation.

Computers and Indian society:

Facilities like supercomputers are for the disposal of elite intellectuals like scientists, engineers and policy makers. It makes indirect impact on the population in general. Indian society also in general has awakened to this computer revolution and technological advances are also being made taking into consideration the requirement of different segments of the Indian society.

India is a developing nation which is geographically big and culturally and linguistically varied. Due to these characteristics it has its own communication difficulties. For a country with large population and scarce resources, computer technology comes as a great tool of social transformation and also in reaching out to the huge population in carrying out developmental works to eradicate illiteracy. It has already revolutionalised the field of communication and in convergence with mobile and internet technology, lives are changing at a great pace the way India was and the way it is today. Urban and rural India is on the verge of a march towards a new country that has been benefited by the emergence of a computer savvy society. However, caution must be taken so as to make every citizen aware of the drawbacks that may be looming against this silver lining. Cybercrimes are the most potential hazard that creeps up with such advancement. Almost anyone who access internet are exposed to such danger. Further, there are threats to critical infrastructure and national interests arising from the use of the internet for criminal and terrorist activities. We all know that most of the hackers are highly qualified graduates. They are young and immature and should be accountable for what they do. However, hackers need not be enemies of the society. For example, a person may try to explore the details and possibilities of programmable systems and enjoys learning an intimate understanding of the internal workings of a system, computers and computer networks in particular. They would like to be called as crackers instead of hackers.

All in all, we cannot deny the fact that our daily lives are getting more and more dependent on computer and mobile technology. Indians all over the world have used the tool called computers not only to help the country to develop but also to change the way the world thinks.

Again, if there are stringent laws with heavy penalties for any violation of ethics or computer misuse, then maybe such misuse can be controlled. However this is also

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subject to Society. If the society itself is corrupt, no matter how stringent a law or how heavy the price to pay, it will not change things. Thus Computer Ethics is wholly dependent on Society. While Computers have been created to be a boon to Society it is the Society who has to keep its integrity and practice Ethics to reap the optimum if not maximum benefits of Computer Technology.

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II

ABSTRACT OF
PLATINUM JUBILEE LECTURE

PLATINUM JUBILEE LECTURE
Self-Reliance & Security in the use of ICTs

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Keywords: *Internet, digital society, Information Communication Technology (ICT),*

The technology which today we refer to as "the Internet" can trace its origins back to the 1950s and beyond. However, it was the development of the World Wide Web in the early 1990s that sparked the exponential growth of the Internet which led to it becoming an extremely valuable aspect of our lives, both economically and socially, and has led it to become a seemingly permanent feature of modern day life.

At the dawn of the Internet revolution, users were amazed at the possibility of contacting people and accessing information across oceans and time zones through a few clicks of their mouse. In order to do so, however, typically they had to be in a fixed location in front of an often large or bulky computer device, typically a PC.

Today people can connect to the global network using a mobile phone, a laptop computer or other portable devices, often with video capabilities and very high speed access. Many game consoles are also Internet enabled and this has fostered a huge growth in online game playing among children and young people.

It took around 20 years to reach the first billion mobile phone users, yet the second billion signed up in just the last few years. In contrast, it took 125 years to reach the first billion fixed-line telephone users.

The evolution from second to third generation mobile phone networks is arguably just as important as the initial jump from analogue to digital. It began more than a decade ago and is progressing at a rapid speed. The newly emerging fourth-generation technologies maintain the emphasis on mobile access but at even higher speeds. Broadband networks and media convergence are generating new avenues for distributing digital entertainment

The expansion of electronic and digital infrastructure has given many millions of people the potential to learn, publish and communicate on an unprecedented scale. Children and young people have very often been the "pioneers" of adopting and adapting to the new possibilities presented by these new and emerging technologies. It has been tremendously empowering for many young people and is opening up huge new possibilities in the fields of education and personalized learning.
The Internet can take children and young people virtually anywhere in the world - and in the process they can be exposed to potentially dangerous risks". *People take away life-skills and knowledge to the e-safety debate.*

Computers have brought untold benefits to children around the world, with the number of connected households increasing each year. By early 2009, there were over 1.5 billion people online, up from under 200 million at the beginning of 1998.

The Internet's potential for good is undisputed. This technology is already greatly enriching the learning process, providing new, exciting and personalized ways of discovering the world. The Internet has also provided an excellent platform for a wide range of games, music and other cultural activities which have huge appeal among the young. However, the Internet has also bought with it a number of unintended, unforeseen and unwanted consequences.

Curiosity, interests, and a desire to learn new things and explore new facets of knowledge: the internet is a great tool to satisfy such needs. But the Internet is an open world in which everyone is free to circulate news or almost anything else. It contains an infinite amount of information, so vast in scope that it is easy to get lost or run into untruths and material not appropriate to your needs or age. Some of these are of particular concern to the health and safety of children and young people.

According to the surveys:

In the USA: 93% of teens 12-17 go online, with 63% going online daily. **In China:** 44% of children said they had been approached online by strangers. **In France:** 72% of children surf online alone.
In Korea: 30% of under 18's spend two hours a day or more online.

Information and Communication Technologies - or ICTs - have transformed modern lifestyles. They've provided us with real time communications, borderless and almost unlimited access to information and a wide range of innovative services. At the same time, they have also created new opportunities for exploitation and abuse. Without proper safeguards, children - among the heaviest users of the Internet - are at risk of accessing violent, sexual and other disturbing images.

Without proper dedication to creating a safe cyber environment, we will fail our children. Although there is increasing awareness of the risks related to the insecure use of ICTs, there is still a significant amount of work to do. It is, therefore, crucial that parents and educators are able to decide, with their child what is appropriate and safe for their use, as well as how to behave responsibly using ICTs.

Accountability of Children

Since children and young people need to be aware of some of the potentially negative aspects of the technologies they use, about possible harmful activities online, such as bullying and harassment, identity theft as well as online abuse. Children must be advised for seeing and experiencing harmful and illegal content online, or young people being exposed to grooming for wrongful purposes, the production, distribution and collection of child abuse material. Empowering children and young people through education and awareness rising is of paramount importance.

Role of Parents, Guardians and Educators

Research shows that more and more children are connecting to the Internet using game consoles and mobile devices, yet many adults are not even aware that these activities include internet connectivity. The role to be played by parents and guardians in this context includes discussing and educating the child about Internet safety, checking the suitability of websites, being involved in the child's Internet activity, and being aware of different behaviors of the child when online. Parents need to teach themselves about the online culture in order to carry out their role. The role of educators includes teaching children, setting rules and providing a safe environment at the place of education.

Responsibilities of Industry

Today's digital world has transformed individual lifestyles the world over. The computing industry has long been all-digital, the telecommunications industry is almost fully digital and the broadcasting sector is well on the way to becoming digital. Always on Internet access has become the norm, with people spending more and more time consuming digital media than any other medium.

The key areas for the ICT industry cover coordination, cooperation, interoperability and codes of conduct by segment, while those identified for broadcasters include common complaint rules, common standards and parental consent procedures. Along the same lines, the key focus areas for the Internet industry and ISPs include restricting access to harmful or illegal content, equipping children and parents with information and easy to use tools, using clear and relevant language regarding services and terms and conditions, responding to and reporting offending content, and evaluating technologies that identify and verify the age of customers.

The mobile operators should consider as the following: ensuring that content is classified in line with national expectations, providing tools that allow access to content to be controlled by the user or a parent/caregiver, clearly signpost the nature of content and services offered enabling users are empowered to make informed decisions, support parents and educate consumers, have a clear position on the misuse of services to store or share abuse content, and support law enforcement in carrying out its work.

Role of Policy Makers

The Internet continues to be a dynamic and incredible resource with almost unlimited capabilities to address societal problems from improved access to healthcare to remote learning opportunities to e-government to innovative and higher paying jobs. However, the growing global issues surrounding online cyber security require a global response, especially when it comes to the protection of our youngest and most vulnerable digital citizens: our children.

The Internet is now the indispensable nexus for an array of digital technologies which are transforming economies, opening up an array of possibilities to improve people's lives and to enrich societies in a variety of ways. With increasing access, the Internet

is becoming truly global, offering its benefits to more and more people, including children and young people.

The culture and economy of a country will shape how the Internet develops and this will have an impact on the risks that people will face as well as how those risks are addressed by the different local stakeholders.

Making them working together, parents, educators and children can reap the benefits of ICTs, while at the same time minimizing the possible dangers for people & society.

Conclusion

A decade ago, approximately 182 million people accessed the Internet globally - and almost all of them lived in the developed world. Remarkably, by early 2009, there were over 1.5 billion Internet users worldwide, with over 400 million of those having access to broadband. Today, while not ubiquitous, Internet users are truly worldwide with over 600 million users in Asia, 130 million in Latin America and the Caribbean, and 50 million in Africa.

According to recent surveys, over 60 per cent of children and young people talk in chat rooms on a daily basis. Three out of four children online are willing to share personal information about themselves and their family in exchange for goods and services and as many as one in five children could be targeted by a predator each year.

But the significance of ICT innovation does not end with more, better and faster ways for people to communicate with each other. ICT innovation is galvanizing innovations in every sphere of society, with the potential to make real and lasting improvements to the lives of all in a world.

As a growing common resource the Internet is increasing the opportunities but also the dangers online, especially for children. Its key objectives are to identify the risks to people & children in cyberspace and improve awareness of the dangers, as well as to develop practical tools to help minimize risks and share knowledge and experience in applying them. **It is not enough to create rules and policy, we must learn to become responsible digital citizens in this new society.**

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III

ABSTRACT OF
YOUNG SCIENTIST AWARD
PROGRAMME

Rough Entropy Based Segmentation for Object Tracking : A Spatio-Temporal Approach

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Object detectionb and tracking is a fundamental problem in computer vision. There are many existing methods to solve some of those problems in object detection and dtracking. Here we propose a method of spatio-temporal segmentation approach where spatial segmentation is carried out using Rough Entropy maximization and temporal segmentation is carried out using background estimation and moving object detection by background substraction. We propose a three point estimation based Beta Distribution which is providing better estimate compared to existing methods. The proposed methods for spatial and temporal segmentation is compared with the existing similar methods.

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IV

ABSTRACTS OF
SYMPOSIUM / INVITED LECTURE

Invited Talk

1. COMPUTER ETHICS AND SOCIETY

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Keywords: Cyber crime, cyber laws, intellectual property rights, democracy in cyber space, open source movement, curriculum.

In the era of Information Superhighway which has transformed our society into a Global Village, the moral principles encompassing any ICT based activities is of great concern. As technology advances, computers continue to have a greater impact on society. Computer ethics is set of moral principles that regulate the behaviour of computing professionals towards professional and social conduct. When computers first began to be used in society at large, the absence of ethical standards about their use and related issues caused some problems. However, as their use became wide-spread in every facet of our lives, discussions in computer ethics resulted in some kind of a consensus. The **Ten Commandments of computer ethics** defined by the **Computer Ethics Institute** provide the basic guidelines. Today, many of these rules have been formulated as laws against computer crime and computer fraud, either national or international. It is expected that all sovereign countries in the world and computer-community should respect these principles.

The present paper discusses about of how much influence computers should have in areas such as **intellectual property rights** including copy righted electronic content, artificial intelligence and privacy concerns in human communication. It also questions about the effectiveness of ethical standards to address new issues raised with the continuous advancement of the new technology. It also discusses about welfare of the society at large, about the **democracy in cyber space** and **open source movement.** The observation that how some nations donot have much respect for the existing cyber laws or, not equipped to punish the law breakers are also presented. The author strongly advocates that Computer and Cyber Ethics should be included as part of curriculum not only in every computer and IT programme but also in

related subjects such as Sociology, Psychology, Philosophy and Law courses. It also suggests the need to have interdisciplinary forums having personnels from academics, industries, police and legal experts at every educational institutions to educate the common users about cyber laws and technologies to protect themselves aginst the cyber crimes.

2. MORALS OF ICT USERS FOR CONTEMPORARY SOCIETY

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Information and communication technology together with computer science has been already flooding information-intensive society of the 21st century. The Internet has been an important global media. It has amazing speed, magical energy, and more choices of information age. In the present age 67.969% of the total population is using internet .The public who use the internet among the ages of 12 to 15 years old reach 95%. The main purpose of the individual is to browse the webpage. The function used frequently in browsing the information from the webpage, E-mail, searching for data, making a friend by messenger playing online games and downloading the software etc. The reason the population of the internet grows up fleetly is because of some vital items. There are abundant information resources on internet: If users just keep computer contact internet, then they will get the information from all kinds of data bases and worldwide famous libraries and news groups or any time and at anywhere.

The common use of internet includes accessing the paragraph from the article, re-creating others photos, borrowing copy software, etc. The right of privacy of information includes the passive right that the personal affairs are not interfered publicly. Personal Values will influence the ethics attitudes of information and Subjective Norm and the Perceived Behavioral Control of Information Ethics. The attitude of information ethics will influence the Intention of Information Ethics.

This study regards the main research structure and confers on the information ethics attitudes of teenagers and behavior. We get the information that is necessary to have the information ethics conception from the literature review. In order to enhance the conception for children and adolescent correct use the information of internet from a

concluding report by "The Development Meeting of the all over the country knowledge economy" in 2002. It should bring into the course scheme with information ethics and use of internet. Ministry of Education advances the research and study of information equipment and ethics for high schools and vocational school teachers in 2006. Besides, the Ministry of Education sets up the website named "eTeacher.edu.tw - teacher network equipment and conception web", moreover, provide the resource, and teaching materials about information ethics. This shows that information ethics has been attached importance by society day by day.

3. PROSPERITY, HEALTH & PEACE THROUGH INNOVATION, PROFESSIONALISM & RELIABILITY IN ICT

Ms. Meena Datta/Prof. (Dr.) Rattan K Datta
C/o. CEO MERIT, Ex. DG, IMD

In the early twentieth century, Shannon solved his problem of building control system through a circuitry using electronic gates. The concept of gates was envisaged by him using Boolean algebra enunciated by George Boole a few decades earlier in a research paper of no significance before the application by Shannon.

In early 1940s, the gates became building block of digital computers. Early computers were mainly used for research in Science & engineering .While the computer technology was evolving, Grahams Bell's telephony was also progressing as a separate discipline though at a smaller pace. With the advent of PCs & user friendly software, the computing became affordable & acceptable for its applications in diverse areas. The computers from the realm of stand-alone came to be networked. This brought telephony & computing closer. The main difference was that pure telephony is analogue mode but communication links of computers in digital mode. This mutual dependence & growth of digital communication led to the convergence of these technologies & new Avatar in the name of "Information Technology (IT)" was born. In late 1990s & early 2000s IT was replaced by the now popular term ICT (Information & communication Technologies). Three laws of technology, namely Moore's law, Gilder's law & Metcalf's Law explains the scenario of explosive growth of these technologies in a synergetic mode and all pervasive applications. Computer was a marvel invention of twentieth century & ICT is going to be the most significant innovation of the present century.

With the convergence of these technologies in the form of ICT, it has become all pervasive. The application of ICT has penetrated in all the development activities of human beings bringing all through prosperity. ICT has also played a great role in drug development & health care. It may not be out of way to state that ICT even helped in the end of cold war. ICT is thus linked to the overall prosperity, improvement in the health care & potential technology to bring the world community together in peace as citizens of global village.

The three pillars of growth of ICT are 'innovation, professionalism & reliability'. In these there is an important controlling factor which is "Ethics & value system". Without the control of ethics, the progress in all the fields could be highly skewed & full of dangers.

This paper discusses these features in four sections.

The first section briefly discusses the evolution of ICT& its application in diverse fields.

The second section brings out the ICT as harbinger of the growth of wealth, health care & peace.

The third section brings out the importance of innovation, professionalism & reliability as the three pillars of strength in continued growth of ICT & its applications. The fourth section provides integration of all these & brings out the importance of channelizing the growth through the self control mechanism of "Ethics". It also discusses the significance of the fourth law of technology on ethics & value system for sustained development.

4. IMPLEMENTATION OF RECURSIVELY MODULO-2 & TRASPOSITION OPERATIONS OF A SESSION KEY (RMTO)

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Key words: Implementation of Recursively Modulo-2 & Transposition Operations of a Session Key (RMTO), Cipher text, Block cipher, Session key.

In this paper message is considered as binary string on which a Recursive Arithmetic operation and Transposition on Pairs of Bits (RMTO) is applied. A block of n bits is taken as an input stream, where n varies from 8 to 256, from a continuous stream of bits and the technique operates on it to generate the intermediate encrypted stream. The same operation is performed repeatedly for different block sizes as per the specification of a session key of a session to generate the final encrypted stream.

It is a kind of block cipher and symmetric in nature hence, decoding is done following the same procedure.

A comparison of the proposed technique with existing and industrially accepted RSA and TDES has also been done in terms of frequency distribution and homogeneity of source and encrypted files.

5. THE NEUROPSYCHOLOGICAL BASES OF TRI GUNAS

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Integrating Spirituality and Organizational Leadership Foundation
&
Professor of Organizational Behaviour,
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University of Delhi

The present paper is the preliminary ideas of a research project which is being conceptualized by the scholar to examine the neuro-physiological bases of the location of tamasic, rajasic and sattvic thoughts and how the tamasic thoughts get transformed into sattvic thought through meditation. The scholar will present the theoretical foundations which she intends to explore it further. The author will talk about two different types of meditation techniques: (1) Mindfulness and (2) Mindlessness (Thoughtlessness) and share some of the practical experiences to establish a balance between right brain and left brain. The paper will conclude by understanding the role and limitations of mind in developing 'witnessing self' which is true real self - The Observer of the experiences leading tonirvikalpa Samadhi.

6. ERP IMPLEMENTATION ISSUES FOR STEEL INDUSTRY

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Keywords - ERP, SRM, CRM, SCM, BI, ROI, MES

The Steel industry is faced with many issues like Moderating demand, Supply and Demand balancing and Rising operation costs. This requires acute customization from ERP backbone to account for Complex manufacturing processes which combines both continuous and batch operations. The successful implementation of any ERP project requires that all stakeholders have a clear understanding of their role and responsibility in the process, as well as realistic expectations about what is about

to happen. The modalities of operation were too complex and not error free. The improved integration & standardization have made the ERP systems attractive to Steel companies to support their business processes. The identified factors provide a foundation for identifying the various issues & challenges involved in ERP implementations are discussed and the different directions for further investigation are presented in this talk.

7. PERFORMANCE ASSESSMENT OF NUCLEAR WASTE REPOSITORY USING DEMPSTER-SHAFER EVIDENCE THEORY

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Keywords: Waste package, Repository, Belief, Plausibility, Expert's opinion

The theory of evidence has been introduced in the late Seventies by Glenn Shafer as a way of representing epistemic knowledge, starting from a sequence of seminal works of Arthur Dempster, Shafer's advisor. In this formalism the best representation of chance is a belief function (b.f.) rather than a Bayesian mass distribution. They assign probability values to sets of possibilities rather than single events: their appeal rests on the fact they naturally encode evidence in favor to propositions. The theory embraces the familiar idea of assigning numbers between 0 and 1 to indicate these degrees of support but, instead of focusing on how this numbers are determined, it concerns the combination of degrees of belief. The formalism provides a simple method for combining the evidence carried by a number of different sources (Dempster's rule) with no need of any a-priori distributions. In this sense, following Shafer, it can be seen as a theory of probable reasoning. A formal definition of the different levels of detail in knowledge representation is introduced, when the concept of family of compatible frames reflects the intuitive idea of different descriptions (features) of a same phenomenon. Dempster-Shafer evidence theory is applied to assess the performance of waste repository.

In the context of the performance of radioactive waste repository, it is essential to assess the possibility of risk or potential health hazards to the environment from a

waste repository. This is due to the fact that the main objective of radioactive waste management is to protect people and their environment from the potential harmful effects of radioactive waste and to minimize the burden for future generations. The risk to health resulting from the leaching of radionuclides from waste into the environment will be influenced by the factors which affect the magnitude of the dose the individual receives and also by individual factors. All these factors are to some extent variable and also uncertain. For example, the transport of the leached contaminants through a geological waste repository basically is affected by the hydrological parameters such as groundwater velocity, longitudinal dispersivity, etc. The variability of these factors are modeled using Dempster-Shafer evidence theory, which provides a measure of the uncertainty in the estimated risk in terms of belief and plausibility based on the evidences collected for the parameters of the model of interest. Evidences are accumulated using expert's opinion. Experts provide the information on the parameter in terms of its various intervals with the specific basic probability or mass. The intervals are called as the focal element and the set of intervals with basic probability together are called as Dempster-Shafer structure. This work will address the details of computation of belief and plausibility and it will also present the various information theoretic based measures such as aggregate uncertainty, dissonance and non-specificity. In order to demonstrate the computation, uncertainty in risk assessment from the discharge of water borne radionuclide through a geological repository is presented. During the transport of this water borne radionuclide, it suffers the physical processes like advection, diffusion and sorption. Parameters of the model are assumed to be continuous and their variability is modeled using expert opinion as the 95% confidence interval of specific probability density function.

8. WOMEN EMPOWERMENT THROUGH INFORMATION AND COMMUNICATION TECHNOLOGY

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Current framework of international development recognizes women empowerment as an immense effective programme for the all round development of the society. Though India is developing economically and technologically by leaps and bound but women, still continue to be discriminated and their current status in the society still causes concern. Across the nation, women constitute a disproportionate share and gender discrimination in terms selection of sex, childrearing, feeding, education, employment, control over property and resources, participation and influencing decision making in public and political spheres etc. Again there is strong preference for sons in India because they are expected to earn for the families and daughters are regarded as economic burdens of the family.

The government has attempted to involve, encourage and empower the women community in the decision making process by providing one third reservation for them in Gram Panchayat to ensure their participation at local at district levels of governance. Besides the education is the mile stone of women empowerment because it enables them to respond to the challenges and confront their traditional roles and change their life styles.

Now world is in the midst of a knowledge revolution, complemented by opening up of entirely new vistas in communication technologies and recent development in the field of information and communication technology (ICT) are indeed revolutionary in nature. Since ICT is mean for every one which doesn't discriminate men and women, so both can take the equal benefit of the advantages offered by the technologies and its product and process. It is having the potential to reach the women which

can empower them to participate in economic and social progress and make them informed about decision on issues that affect them.

Women because of their low levels of literacy and lack of access to technical education causes the distance in level of the empowerment and equality comparison to the men. But ICT have the potential to digitally link each and every woman in the world in computer network, which opens up endless opportunities for open and distance learning, information exchange, sharing of their views, awareness of their rights, which can ultimately led them, to be empowered socially & economically.

While the government, industry and educational institutions is increasing women empowerment in India, their contributions will be nullified if women themselves do not take a proactive stance in bettering their lives, But pursing opportunities in the Information and communication technology industry and ensuring that future generation of women are educated by use of ICT or going through some training or academic programme in ICT, women can elevate their position in society and gain financial and social independence.

9. BIOMETRICS: FUTURE TRENDS AND CHALLENGES

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The Biometrics Technology is growing with the single biometric trait (uni-biometric systems) to the multiple biometric traits (multimodal biometric systems). The multi-biometrics systems are advantageous over uni-biometrics in universal approach, easy and quality search in large biometric database and provide better security. It also improves the failure to enroll rate. On the other hand, currently, the users must touch the sensor for their biometric images to be acquired. In public areas, like the hospital especially, the sanitary issue is of utmost importance. People are concerned about placing their fingers or hands on the same sensor where countless others have also placed theirs. This problem is particularly exacerbated in some Asian countries at the height of the SARS epidemic. Besides, latent biometric prints which remain on

the surface could be copied for illegitimate uses. Apart from that, the surface will get contaminated easily if not used right, especially in harsh, dirty, and outdoor environments. Therefore, there is pressing need for a biometric technology which is flexible enough to capture the users' biometric images without having the users to touch the platform of the sensor. In solution to this the touchless biometrics market is also on the rise. These biometric systems are more accurate than the touch-based biometric systems since they are independent of touch. Similarly, the knowledge of the identity is not sufficient to prevent the threats, this cause growth in the biometric technology from identity detection to behavior detection. The multimodal biometrics is found to be more reliable due to the presence of multiple evidences. It will be extremely difficult for an intruder to violate the integrity of a system requiring multiple biometric indicators. However, an integration scheme is required to fuse the information of the individual modalities using classifiers such as sum rule, decision tree and linear discriminant function etc., this address the problem of information fusion to integrate the different modalities. These future trends and challenges in biometrics from uni-biometrics, multi-biometrics and touchless (or remote) biometrics are discussed in this work.

10. CASE STUDY: MAKING THE BEST USE OF INFORMATION TECHNOLOGY IN EDUCATIONAL INSTITUTES

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It's a challenge to make use of Information Technology tools and resources in an optimal fashion for an Educational Institute/College/School. This can be simplified if we breakdown the requirements and identify the resources required for fulfilling the needs and then devising a project plan for implementing it. Let me explain the same by quoting example of the educational Institute where I had successfully carried out the implementation of the same in two premier educational Institutes in Patna, India.

IIBM & ZHI are 33 years old premier institutions in the field of Management & IT

education for the state of Bihar and Jharkhand. Although being a pioneer in setting up the First Computer & IT Lab in Eastern India and boasts of more than 450 computers for roughly 4000 students base was unable to make optimum use of all the resources.

The immediate requirements identified were as follows:
- High Speed Internet connectivity for the center
- Network each and every computer in the lab.
- Setting up Domain based Server-Client Model
- Setting up Internet Proxy Server with Caching and add on facility of Web Filtering.
- Audit and store internet surfing usage information in a database.
- Giving access to Linux server to students.
- A Local Web server hosting web based tutorials for students.
- A Network file server for students and office staffs.
- Remote Software deployment.
- Wireless Network Setup

The above could be easily deployed if we seek help of big IT Integrators but it is going to cost heavily to the Educational Organisations. This case study is going to present a simple yet detailed presentation on how we can get it deployed in our environment with the help of our Faculties and Students for enhancing the User experience in the Institute's premises.

11. OPENNESS AND PEER PRODUCTION IN SCIENCE

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12. Transformation of objects from derivation to delegation in OOPs through C++

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Keywords: Delegation, Object Oriented Design, "this" pointer.

Deep hierarchy of classes by derivation is not a good object oriented design. It has been realized in several papers that more levels of inheritance create ambiguity and for that containership & composition are used where an object holds another abject or technically- "an object of a class is defined in another class or a class is declared within a class". These discussions and researches have given a new turning point for the discussion of the new feature of OOPs in C++ - delegation. In this paper, challenge to implement delegation in C++ is accepted & proved by successful execution of the code. Here delegation is defined as "allowing the behavior of an object to be defined in terms of the behavior of another object", "an object can be delegate for other object", "an object can change its delegation during execution". So it is proposed here that delegation is better alternative to class inheritance. In this paper our proposal is with source code in C++, which executes successfully.

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V

ABSTRACTS OF
ORAL/POSTER PRESENTATION

1. THE MYSTERY OF HIERARCHICAL SECURITY OF DATABASE THROUGH DNA FINGERPRINTING RECOGNITION USING GEOMETRIC PARAMETERS

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Keywords: Database security, Genealogy, Genetic code, DNA database, Euclidean distance.

History bears testimony to the fact that the march of any civilization has been on the shoulders of science and technology. Almost everything that distinguishes the modern world from earlier centuries is attributable to science specially information technology. With the rapid growth in computing technology and its application in all spheres of modern society, databases have become an integral component of our everyday life. Database management system manages all the information to our use. The database needs to ensure its security and make it personalized and secure. To make it personalized up to family or royalty, DNA fingerprinting is only the aspect that serve best. In this present article, the researcher has endeavored to make all possible attempts to clarify the DNA database as the tool for Database Security that maintain the hierarchy of family inheritance.

In this work, we are going to recognize the DNA sample present in the database with a feature based approach. The approach here is mainly by using the histogram plot; by this we are going to extract the characteristics of the image features. By comparing these image features with images present in the database, we can decide whether the test image is from among DNA sample already known or not. If the test image is find in the database then system is displaying the identity of the user as well as works as the password to access the particular database on the basis of biological inheritance.

2. COMPUTER ETHICS: GOOD & BAD EFFECTS ON SOCIETY

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Keywords: Ethics, Ethical responsibilities, Computer Crime, Privacy.

In today's world, computers can have complex and contradictory effects on human life. They can enhance our quality of life by creating access to previously unimagined worlds. On the other hand, as computers become increasingly important in our everyday lives, their potential to strip away our privacy and autonomy increases exponentially.

The technologies which Computer professionals create, maintain and administer in society are powerful and flexible, so computer professionals have a special responsibility to society to consider the possible negative impacts of their products, services and actions, and then take care to see that risks are minimized.

3. FORENSIC RESEARCH BY FACE DETECTION AND RECOGNITION

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Keywords: Face detection, face recognition, facial feature detection/ tracking, maximum likelihood, maximum discrimination, information theory, visual learning techniques, template matching

Two of the most important aspects in the general research framework of face recog-

nition by computer are addressed here: face and facial feature detection, and face recognition -- or rather face comparison. The best reported results of the mug-shot face recognition problem are obtained with elastic matching using jets. In this approach, the overall face detection, facial feature localization, and face comparison is carried out in a single step. This paper describes our research progress towards a different approach for face recognition. On the one hand, we describe a visual learning technique and its application to face detection in complex background, and accurate facial feature detection/tracking. On the other hand, a fast algorithm for 2D-template matching is presented as well as its application to face recognition. Finally, we report an automatic, real-time face recognition system.

4. SECURITY CHALLENGES OF GRID COMPUTING

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Keywords: Usages, Secure, Public key, VPN;

There are many ways to access the resources of a Computational Grid, each with unique security requirements and implications for both the resource user and the resource provider. A comprehensive set of Grid usage scenarios is presented and analyzed with regard to security requirements such as authentication, authorization, integrity, and confidentiality. The main value of these scenarios and the associated security discussions is to provide a library of situations against which an application designer can match, thereby facilitating security-aware application use and development from the initial stages of the application design and invocation. A broader goal of these scenarios is to increase the awareness of security issues in Grid Computing. The basic concept of this paper is to review the various Grid usage scenarios and analyze their security requirements and implications.

5. FRACTAL DATABASE: A STEP AHEAD OF CONVENTIONAL DATABASE SYSTEM

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Keywords: Fractal, database, chaotic database, internet data

Database systems are chaotic and chaotic systems are fractal by nature. Databases available and used in internet are usually chaotic. There is no core design, development method, suitable technology or order for managing these internet databases. They provide no consolidated view of the data. Until recently, the application of fractal geometry to hardcore business problems has been limited. Fractal geometry is linked to the study of chaos, a search for order hidden in the apparent disorder of systems. Application of fractal concepts is hoped to improve the orderliness in large databases particularly used in the internet. Efficient algorithms and software would be developed to study the fractal set and data modeling. This paper attempts to establish a logical link between the fractal geometry to be used for modeling of chaotic database used in the internet.

6. THE SUPPORT OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN INDIA FOR OPEN EDUCATION

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In this paper the main idea is to highlight India's efforts in raising literacy levels through open education (OE) by utilizing information communication technology (ICT) available in the country. The most vital contributions of ICT in the field of education are easy access to learning resources. Learners can now browse through e-

books, sample examination papers, previous year papers etc. and can also have an easy access to resource persons, mentors, experts, researchers, professionals, and peers-all over the world by using ICT. Here it discusses the education scenario, emergence of distance/correspondence/open courses in universities and also, highlights the government initiatives for the use of ICT in open education and technologies available in India. It examines the preparedness of participating institutions, status of networks for facilitating virtual classrooms for the spreading of OE in India. It suggests the need for developing and networking of digital libraries (DLs) in India. It highlights about implementation of the 'Indian Training and Education Network for Development (INTEND) and the Open Education Network (OPENET) of physical, intellectual and academic resources of all the OE institutions in the country. Few practical solutions for spreading up of OE for policy makers and implementers, participating institutions and distance learners are mentioned.

7. CONCERN AND RESPECT FOR MANKIND IN THE DIGITAL AGE

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Computer Ethics are ethical values for guiding computer professionals in their conduct. This conception is motivated by the belief that information technology will affect everything that human beings hold dear. The creation of the Ten Commandments of Computer Ethics by the Computer Ethics Institute in 1992 expects to establish a set of standards to instruct people to use computers ethically. The uniqueness about computer ethics is computing technology itself. Internet hacking, online theft of credit cards and breaking into bank accounts are abuses of computer technology. It can be very dangerous if these wrong practices are mixed with business and sensitive information .We must remain vigilant and proactive to protect what is dear to us.

8. USE OF PATENT INFORMATION FOR R&D PROJECTS

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Patent is a techno-legal document which provides systematic disclosure of the invention and in return, the assignee/inventor is granted 20 years of monopoly rights. All the filed patent applications are published after 18 months thus disclosing the technical details for public information. Further, after the grant, a granted patent document is published for the benefit of public. A patent document not only provides information regarding the invention but also discloses other important fields like inventors name, assignee, international classification, filing date, priority application, priority country, documents cited by the inventor and documents cited by examiner during prosecution, abstract, application number, grant number, patent number etc. All these above-mentioned fields are searchable on freely available databases as well as paid databases.

9. A COMPARATIVE STUDY OF COCOMO II AND PUTNAM MODELS OF SOFTWARE COST ESTIMATION

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Project planning is one of the most important activities in software projects. Poor planning often leads to project faults and dramatic outcomes for the project team. If cost and effort are determined pessimistic in software projects, suitable occasions can be missed; whereas optimistic predictions can be caused to some resource losing. Nowadays software project managers should be aware of the increasing of project failures. The main reason for this problem is imprecision of the estimation.

The accurate prediction of software development costs may have a large economic impact. As a consequence, considerable research attention is now directed to understand better the software development process. The objective of this paper is to provide an example base study of two software cost estimating models (COCOMO II and PUTNAM). By the case study, it is observed that Putnam model is very sensi-

tive to the development time: decreasing the development time can greatly increase the person-months needed for development whereas COCOMO II is more realistic because it is based on functions points and object points of the project.

10. CONVERGENCE OF EARTHQUAKES, ATMOSPHERIC ANOMALIES AND NEURO FUZZY MODELS: A CLOSE STUDY

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Keywords: Earthquake Prediction, Neuro Fuzzy Model, Thermal anomalies, Relative humidity

Earthquakes, the most devastating natural disasters, occur almost in all parts of the world, in the present decade. And they pose a major threat to human life, nature and also nuclear plants, hence affecting the global environment as we have seen in the case of Japanese earthquake which occurred in March 2011. A popular notion about earthquake is that it is unpredictable.

But the increase in frequency of earthquakes all over the globe has necessitated meaningful research in earthquake prediction. Work done so far has bore fruits in terms of finding significant earthquake precursors. The promising earthquake precursors include atmospheric anomalies and radon gas emission. After identifying earthquake precursors next step is to classify the existing weather data inventory based on known preseismic patterns and predict an earthquake. This requires reliable computing methodologies, converging on Neuro Fuzzy model, an emerging soft computing tool.

This research paper intends to discuss atmospheric anomalies as earthquake precursors, role of Neuro Fuzzy Model in prediction arena and finally suggests an amalgamation of Neuro Fuzzy Models with atmospheric anomalies to predict earthquake.

11. E-REGISTRATION - A GENERIC SOLUTION FOR LAND RECORD REGISTRATION IN INDIA

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Keywords: Land Records, Web Service, Registration

The present land registration system in India is a major issue in aspect of time complexity, document verification process and maintenance of registered land records. This Land e-Registration Project is part of NeGP (National e -Governance Project) and current automated process gave us unexpected result which was not expected in country like India where most of the e-governance project fails because of unavailability of resources, enormous population, crimes and corruptions. We have also used the best technology to maintain security of the lease land deeds documents, no frauds in fee during registration of documents and to run overall ecosystem in a streamlined direction.

12. COMPARISON OF ALGORITHMS FOR SEQUENTIAL PATTERN MINING WITH PROGRESSIVE DATABASE FOR OPTIMUM TIME

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Data Mining is the process of extracting interesting information or patterns from large information repositories such as relational database, data warehouses, XML repository etc. Database mining is motivated by the decision support problem faced by most large retail organizations. Development of bar-code technology has made able retail organizations to collect and store massive amounts of sales data, referred to as the basket data. A record in such data typically consists of the transaction date and the items bought in the transaction. A sequence database consists of sequences of ordered elements or events, recorded with or without a concrete notion of time. There are many applications involving sequence data.

In this paper we have presented an application of data mining on grocery shop database. This warehoused database is mined using PISA, which stands for Progressive mining of Sequential patterns algorithms whose results can be utilized for decision making and comparing the performance of this algorithm with other algorithms like GSP+, SPAM+, and DirApp. They all are coded in C++.

13.   AN APPROACH FOR EFFICIENT AUTOMATIC CAR NUMBER PLATE RECOGNITION

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Keywords: Number Plates, Character Recognition, Plate Localisation, OCR

The rapid technological development in the area of computer image processing and constantly increasing need for efficient and cheap security systems resulted in the development of different kinds of solutions based on computer picture analysis. One type of these solutions is automatic car identification systems based on localization and recognition of the number plates shown in photos or camera picture. This paper presents an efficient approach for Automatic Number Plate Recognition which consists of four phases i.e. Number Plate Localisation, Preprocessing, Character Segmentation and Optical Character Recognition. The results have been compared with standard methods at each phase and this proposed method presents better results than the existing ones.

14.   A FRAMEWORK FOR GREEN IT IMPLEMENTATION IN EDUCATIONAL INSTITUTES

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Keywords: Green IT, Critical Success Factors, Green IT Initiatives, Framework

Today the biggest challenge facing the environment is global warming, caused by

carbon emissions. Now a day IT Departments of Educational Institutes and IT Industries activities affecting the earth. The uncontrolled environmental problems are pretty overwhelming. It is very much necessary to save the environment and ultimately the earth. It is essential to avoid air pollution, noise pollution, electronic and electrical waste. IT equipments especially Copiers & Printers may introduce unhealthy solids and a gas into building including brominates retardants. The aim of the research is to study the implementation of Green IT and to identify the critical factors which contribute to successful implementation of Green IT.

15. DISTRIBUTED COMPUTING ENVIRONMENT BASED ON MOBILE AGENT

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Distributed computing technology has been steadily progressive over the past decade. The main objective is to explore the current industry trends in the software architecture for distributed computing among heterogeneous mobile computing platforms. Advances in object technology have been acting as a natural booster for the advances in distributed mobile computing. Mobile Agent Technology has attracted considerable interest in recent years. Mobile agent is software entities that made up of Code and Data that can migrate, from Host to Host, executing their code. Mobile code carried by Mobile Agent can automatically travel to several data sources in order to complete a designated task.

In this paper we present the logical view of the reference model of mobile agent system. Based on this model, we present general Mobile Agent Environment for enhancing the performance of Mobile agent system. In this Environment, we merge the agent and the platform driven approaches into a flexible method for migrating the agent's code and data into a much easier way. The key idea of our approach lies in enhancing agents with an independent, fully encapsulated protected mechanism carried by agents themselves. A fundamental issue in the development of Mobile Agent systems is to provide environment for the executing agent application. Mobile Agents can be wandering around in the network using free resources for their

own computation. Computers all around the Internet provide a virtual parallel system for parallel processing.

16.   Framework to Find the Requirement for Software Reengineering: A Metric Approach

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Many reengineering approaches have been developed to analyze software systems written in different languages like C, C++ or Java. These approaches typically rely on a meta-model, that is either specific for the language at hand or language independent (e.g. UML). However, partial reengineering has been address rarely. Some time it is more cost effective not to reengineer the whole software but the part of the software. The process of partial reengineering provides an opportunity to look at existing design and to identify opportunities for improvements. In this work a metric framework has been discussed, that can be used to calculate reengineering requirement cost of software and its different modules. To validate this approach a case study has been undertaken. On the basis of results obtained by these metrics, a decision can be made regarding maintenance/ reengineering/retirement need of software/ part of the software.

17. COMMUNITY RADIO: AN INNOVATIVE ICT APPROACH FOR ENHANCING WOMEN'S PARTICIPATION IN DEVELOPMENT

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Keywords: Community Radio, ICT, Technological Participation

With the rising divergence in knowledge-intensive professional sectors such as information and communication technology (ICT), the vision of India being a developed nation can be achieved by facilitating participatory development and giving equal opportunities to both men and women. Differing from other media forms in its ideology and process, a Community Radio (CR) initiative is increasingly been seen as an innovative ICT tool to enhance people's lives economically as well as socially, especially for women. A research was carried out in CR Bundelkhand to study the impact of CR on the lives of women.

18. OUT OF THE MARGINS: COMMUNITY RADIO EMPOWERING WOMEN IN INDIA

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Keywords: Technology, Community Radio, Women

The Gender Policy for Community Radio by "The World Association of Community Radio Broadcasters" (AMARC) draws attention to the active involvement of women in the media. Historically being kept aloof of media and technology, the policy points an obligation onto media practitioners to help achieve increased participation and access of women to expression and decision-making in and through information communication technologies (ICTs). And therefore, a Community radio acts as a best technological yet local media format which can bring women to the forefront by voicing their opinions and empowering them. The present paper describes how a community radio can act as a tool for empowering women in Indian context.

19. WARNING BELLS: MOBILE TOWERS THREATENING THE ECOSYSTEM

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Keywords: Mobile Towers, Radiofrequency, Ecosystem etc.

The use of cell phones has increased at a phenomenal rate, recently, leading to the installation of vast number of mobile towers. These towers receive and transmit radiofrequency signals to communicate. Therefore, the radio frequency level in the environment has increased tremendously in intensity and complexity. These radiations are source of thermal energy and can adversely affect living-organisms including microorganisms, plants, birds and animals; if they are exposed to them on a continuous basis. The present study investigates the harmful effect of these radiations on these living organisms and how this can change the balance of the ecosystem.

20. NEURAL NETWORKS FOR CASH FORECASTING OF AN AUTOMATED TELLER MACHINE: A CASE STUDY OF SBI BHADRAK MAIN BRANCH

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Keywords: Neural Networks, Multi-layer Perceptron, Automated Teller Machine

This paper presents a cash forecasting method based on neural networks for an Automated Teller Machine (ATM). Every financial institution ranging from small to large scale faces the same daily challenge. While it would be devastating to run out of cash, it is important to keep cash at the right levels to meet customer demand. In such case, it becomes very necessary to have a forecasting system in order to get a

clear picture of demand well in advance. Neural Networks have become increasingly popular in finance for tasks such as classification and forecasting. The ability to predict cash requirement with a desired accuracy of actual demand of an ATM provides target for supply optimization well in time. The method based on neural networks is validated using the past data collected from the SBI ATM of Bhadrak district of Odisha. Further, we consider a method of daily forecasting by taking the parameter for a day as input to forecast cash requirement of the ATM for next day. The performance of the method is encouraging. This system can be scaled for all branches of a bank in an area by incorporating historical data from these branches.

21. WOMEN EMPOWERMENT AND EMPLOYMENT WITH DIGITAL TECHNOLOGY

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Keywords: Empowerment, Information Technology

A prominent feature of the IT sector is the growth of IT enabled services. There has been recent growth in IT enabled service businesses in India as call centres, medical transcription, technical support and back office processing, engineering and design, geographic information services, payroll and other human resource services, insurance claim processing, legal databases. According to Nasscom estimates, women comprise 20 - 25% of total number of science and engineering graduates in the country. The number of software professionals has been rising continuously over the years. Apart from direct employment, ICT has benefited women in a number of ways. It is a viable tool of information and communication which goes a long way in empowerment of women. Immense amount of information is obtained through the internet. Gyandoot is a project started in Madhya Pradesh to fund rural networked cyberkiosks through panchayats. Through this project, information is available about rural life and agricultural projects. Smile (Savitri Marketing Institution for Ladies Empowerment) is a voluntary organization in Pune. Through Internet, there is greater awareness and exposure and market reach for the products. Internet generated debates. Dairy Information Services Kiosk (DISK) is a project which uses Information

and Communication Technology (ICT) in the dairy sector in Gujarat. ICT enables the creation of cost effective solutions that strengthen the exchange of useful information between farmers and the union. In Warana Project, VSAT-and-RF-based computer-communication network was used for marketing of agriculture produce with a number of online features for selling the produce of the 70 villages to wholesale outlets in Pune and other cities and towns in Maharashtra.

22. AN APPROACH TO QUALITY TECHNICAL EDUCATION THROUGH INFORMATION & TECHNOLOGY - MILES TO GO- ODISHA AS A ROLE MODEL

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Emergence of information technology has connected the world with the click of a mouse. Today a student having access to internet can talk to anybody in the world and exhibit his talent. Quality education is not possible in the absence of information technology which has cared for speed and time of the people. Parents treat technical education as a passport for their wards to enter into corporate houses with a handsome package. Seeing the emerging globalization process & competition amongst the institutions, strategy for building excellent technical institutions in Orissa for attracting students and stakeholders should taken care off.

23. I MPLEMENTATION OF N-GRAM DATA STRUCTURE FOR TELUGU SCRIPT

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N-Grams are a fixed length consecutive series of "n" characters and they are algorithmically based upon a fixed number of characters. The searchable data structure is transformed into n-grams (overlapping, non-overlapping), which are then used to create the searchable database. The application of n-grams to information

retrieval derived from the desire to decrease dictionary size. While the number of words that may be found in a collection is in theory infinite as the collection grows, the number of n-grams is bounded by |alphabet|n.

24. EMERGENCE OF GLOBAL ICT OUTSOURCING

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Key Words: Information and Communication technology, Globalization

The main objective of this paper is to succinctly communicate the idea behind global outsourcing market and what motivates an organisation to outsource. Over the years, the outsourcing market has experienced tremendous growth. There are wide varieties of services offered by vendors who cater the needs of huge market players. As coin has two sides, there are substantial reasons against outsourcing as well. Organisations over reliance on outsourcing may also lead to disastrous consequences. So, Intensive information gathering about the client before making the bid will be beneficial as there is clarity of the operational terms required. The present paper throws light on the issues that are needed to be addressed before signing an ICT outsourcing deal.

25. IMPLEMENTATION OF C4.5 ALGORITHM ON PINE APPLE EXPERT SYSTEM

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Keywords: Expert Systems, Machine Learning, C4.5 Algorithm, Pine Apple Crop, JSP & MYSQL.

The present paper deals with the development of expert systems using machine learning algorithm techniques to advice the farmers through online in villages. An Expert System can be defined as a computer program conceived to simulate some forms of human reasoning and capable to manage an important quantity of specialized knowledge. A system that uses human knowledge captured in a computer to solve problems that ordinarily require human expertise. One of the major abilities of human is the process of learning. Much of scientific effort has run into the examination, what behind this ability is. But until now there is no unique definition of learning and we are just beginning to understand, how learning works.

Learning consists of remembering, the ability of combining Well-known facts and the recognition of patterns. The human learning process is much more complex as here described, but it is good starting point to think about this issue. If we could write a program, which has the same ability to learn as a human, we would come close to the dream of some famous science fiction writers. Nowadays we are far away from this, but algorithm for special problems has been invaded. And with the research and development of such algorithm the understanding of the human ability of learning might improve. Machine learning is a core sub areas of artificial intelligence. It is very unlikely that we will be able to build any kind of intelligent system capable of any of the facilities that we associate with intelligence, such as language or vision, without using learning to get there. These tasks are otherwise simply too difficult to solve. C4.5 is an algorithm used to generate a decision tree developed by Ross Quinlan. C4.5 is an extension of Quinlan's earlier ID3 algorithm.

The decision trees generated by C4.5 can be used for classification, and for this reason, C4.5 is often referred to as a statistical classifier. C4.5 builds decision trees from a set of training data in the same way as ID3, using the concept of information entropy. Using this C4.5 Algorithm we developed a new 'Pine Apple Expert Advisory System'. This system is mainly aimed for identifying the diseases and disease management in Pine Apple fruits and Pine Apple plants to advise the farmers through online in the villages to obtain standardized yields. The present advisory system is designed by using JSP as front end and MYSQL as backend.

26. RULE BASED MECHANISM ON PEDIATRIC EXPERT SYSTEM

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Keywords: Expert System - Rule Based-Backward
Chaining-Pediatrics- JSP --MYSQL

Pediatric Expert System is a computer program that exhibits, within a specific domain, a degree of expertise in problem solving that is comparable to that of a human expert. The knowledge base consists of information about a particular problem area. This information is collected from domain experts (doctors). This system mainly contains two modules one is Information System and the other is Expert Advisory system. The Information System contains the static information about different diseases and drugs in the field of Pediatrics. This information system helps the patients /users to know about the problems related to children. The Pediatric Advisory system helps the Patients /users to get the required and suitable advice depending on their queries. This medical expert system is developed using Java Server Pages (JSP) as front-end and MYSQL database as backend in such a way that all the queries are carried out in a user-friendly manner. In the expert system, a rule based mechanism is used for better reliable results.

27.   BIOMETRICS DATABASE: ESSENTIAL TOOLS FOR INFORMATION SECURITY AND NATIONAL INTEGRITY

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Keywords: Biometrics, tools, information security, national integrity.

Biometrics is a technology used for measuring and analyzing a person's unique characteristics. Biometrics consists of methods for uniquely recognizing humans based upon one or more intrinsic physical or behavioral traits. These are built on the principles of biological, physical and computer sciences. In computer science, in particular, biometrics is used as a form of identity access management and access control. It is also used to identify individuals in groups that are under surveillance. Physiological biometrics is related to the shape of the body which include, fingerprint, face recognition, DNA, palm print, hand geometry, iris recognition, which has largely replaced retina, and odor/scent. Behavioral biometrics is related to the behavior of a person; examples, are typing rhythm, gait, and voice. Some researchers have coined the term behaviorometrics for this class of biometrics. This paper illustrates various types, principles, working and uses of biometrics which are the essential instruments providing safety, security to maintaining national integrity and global peace.

28.   COMPUTER SYSTEM ETHICS IN CONTEMPORARY SOCIETY AN EXPLORATORY ANALYSIS

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Keywords: Ethics, Computer Ethics, Ethics in Society, Business ethics, ethical codes, Technology ethics,

The impact of computer system's age is everywhere, but not without a price. The end user is concerned about the ethics along with increased dependence on the systems. Increased dependence on computer system has brought with it problems of vulnerability to dishonest and unethical practices. Internally, the ease with which executives may manipulate data has tempted many to steal funds and sensitive information at the touch of a button. Networking has further complicated protection. Programs are now available to fill "holes" in computer defenses. Although unethical acts have been focused on mainframes, small time level of stealing is also prevalent. This paper discusses the ethical issues prevalent in computer systems of this contemporary society.

29. CELL BREATHING AND INTERSYSTEM HANDOFF IN CONGESTED MOBILE NETWORK

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Keywords: Cellular Networks, Congested Area, Cell Breathing, Intersystem Handoff.

In this paper a comparative study of cell breathing and intersystem handoff has been provided for the purpose of congestion control. In this paper the cost and power involved in both methods have been compared to select the best option for load balancing without any compromising with the Quality of Service.

30. EMPOWERING RURAL MARKETING THROUGH ICT

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The recent trends of Information & Communication Technology is impacting the rural marketing in a big way which results an exponential growth in the concerned sector. The rural markets in India have grown in size, range and sophistication in recent times. Rural markets have great potentialities in India and offer bright prospects to the companies. Domestic companies as well as MNC's are following the mantra of 'Go Rural'. These companies are practicing 'Rural Marketing' which is a distinct specialized field of marketing discipline which encompasses a customized application of the marketing tools and strategies to understand the psyche of rural consumers in terms of needs, tailoring the products to meet such needs and effectively delivering them to enable a profitable exchange of goods and services to and from the rural market.

Rural Marketing is evolving into an important discipline and improvement in the field of Communication and Information Technology has empowered rural marketing. Accessible, transparent and remunerative markets are necessary to raise incomes and improve livelihoods of rural poor. Information technology enabled services, methods, techniques and applications are providing requisite support and enhancement in rural marketing thereby helping the rural poor. Growth in the field of telecom services and media has led to larger accessibility of rural consumers and spread of awareness and information about companies and their products.

E-rural marketing represents application of internet based technologies as a tool, to facilitate effective and efficient exchange with and from rural market. Examples of efficient and successfully implemented E-rural marketing practiced companies are ITC's e-choupal which linked the firm directly with the ultimate buyer virtually. It is an internet kiosk for providing information to farmers on crop/weather/prices, sell a

variety of products to them and buy various farm products from them. Another company's Amul Dairy Portal is another example which helps Amul provide useful information on dairying to the farmers and also it is helping in improving milk collection in 2500 centres in Kheda, Gujarat. EID Parry India Agriline is another such example which attempts to bring about e-commerce in agricultural and non-farm products by offering a network of parternership, 36 internet kiosks (Parry's corner) have been set up using the franchise route. Government of India is also running several information technology enabled services, market price information, and so on. TARAhaat has introduced virtual marketing media in rural parts of India by launching its Internet portal. This project provides meaningful information about products and services and offers an opportunity not only to the corporate world but also to the rural entrepreneur. E-Mitra is another initiative launched by Rajasthan Government for farming citizens. Under E-Mitra Lok Mitra project was launched to help adults make payments online.Drishtee.com has its origin in Gyandoot, a government project in Dhar district of M.P. Gyandoot provided an intranet for 33 villages information kiosks, offering a range of mainly e-governance related projects. All these government initiatives are making the rural people information savvy and providing access to the firms for utilization in rural marketing. The right application of Information and Communication Technologies are benefitting companies in rural markets. Therefore the aim of Rural Marketing to cater to the demands of the rural consumers and creating the demands as well, thereby achieving profit is being fulfilled with the help and support of Information and Communication Technology.

31. BEHAVIORAL ANALYSIS OF DIFFERENT CRYPTOGRAPHIC TECHNIQUES OF IPSEC ON DIFFERENT WIMAX SCENARIOS

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Worldwide Interoperability for Microwave Access (WiMAX) is a telecommunications technology providing wireless data, voice and videos over long distances." The main goal of WiMAX is to deliver wireless communications with quality of

service (QoS) guarantees, security and mobility.

With the help of Wimax technology, one can overcome the limitations of the existing wireless communication like short coverage area, lack of security and low data rate. In this study, different cryptographic techniques like Advanced Encryption Standard (AES), Data Encryption Standard (DES), Triple DES (3DES), (DES+MD5), (Message Digest) MD5 have been used for different packet sizes and evaluated their performances on the basis of trade of index. Also, these cryptographic techniques are applied for group communications in WiMAX networks. Here, 10 WiMAX scenarios are discussed based on these techniques, which can be further, extended for large no of scenarios for studying the behavior of IPSec over WiMAX.

32. DATA AGGREGATION ON WIRELESS SENSOR NETWORK PERFORMANCE WITH EFFECT

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Keywords: Aggregation; Sensor Network; Clustering.

In this application we have a better data aggregation framework on WSN gives an efficient battery power and improved lifetime and it with the various concepts associated with WSN and various advantages like knowledge repository, cost deduction, phishing filters, ERP applications, data privacy distinguish competencies through resources and capacity building. We investigate models and mechanisms for detection and recovery form faults and propose an adaptation framework to facilitate their deployment and maintenance. It can be achieved by making the framework as middleware for aggregating data, measured by a number of nodes within a network. The performance of TAG in terms of energy efficiency in comparison with and without data aggregation in WSN is presented.

33. QUALITATIVE AND QUANTITATIVE ANALYSIS OF HISTOPATHOLOGICAL DIGITAL IMAGES USING ARTIFICIAL NEURAL NETWORK

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Keywords: Histopathological, Artificial Neural Network (ANN), Principal Component Analysis (PCA), tissue, qualitative and quantitative analysis.

Histopathological Images are the images of diseased tissues of any section of the body. Basic idea behind this project is to benefit the physicians in diagnosing the problems faced by patients. We developed a black-box that analyses the quality of the Histopathological Images using Artificial Neural Network. For analysing the quality we are using components like Feature Extraction (for describing the Image quality), Principal Component Analysis (PCA) for abbreviated value of feature extraction, and finally Artificial Neural Network (ANN) for justifying the image quality. We then compare the system output with the pathologist's prediction, and conclude about quality in terms of good, moderate or bad. It is our strong belief that there is no such system documented in the scientific community by which doctors can relate their qualitative results (which varies doctor to doctor) of Histopathological Images.

34. MAMMOGRAM IMAGE AUGMENTATION WITH AN ASSORTMENT OF MORPHOLOGICAL METHODS

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Keywords: Enhancement, mammogram, micro calcifications, morphological enhancement operation, structuring elements.

Image enhancement technologies have been widely used for improving the quality of the images for screening mammograms. This paper presents an approach to enhance mammogram image in term of improvement in the contrast of microcalcifications in mammograms using a contrast enhancement algorithm based on a morphological enhancement operation using flat and non-flat structuring elements.

35. AUTOMATIC SHAPE ANNOTATION USING K- NEAREST NEIGHBOR (K-NN) TECHNIQUE

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Keywords: Automatic image annotation, feature extraction, shape features, k- nearest neighbor.

An automatic image annotation is a process to assign tags by analyzing images. Shape is the most prominent feature of images, by using this feature tagging of images is possible can be termed as automatic shape annotation. In this paper, the authors presented experimental analysis of using machine learning technique to classify object images of a standard dataset for annotation purpose. In particular, annotation performance obtained using classifier based on k- nearest neighbor (k-NN) algorithm.

Shape based features are extracted and organized to form a shape feature. An annotation system is developed using a k-NN classifier and the results obtained are presented and discussed.

36.   EVALUATE SEMANTIC SIMILARITY OF WORDS USING SEMANTIC DISTANCE

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Evaluating semantic similarity of concepts is a problem that has been extensively investigated in the literature in different areas, such as artificial intelligence, cognitive science, databases and software engineering. Semantic similarity relates to computing the similarity between conceptually similar but not necessarily lexically similar terms. Currently, it is growing in importance in different settings, such as digital libraries, heterogeneous databases and in particular the Semantic Web. In such contexts, very often concepts are organized according to taxonomy (or a hierarchy). We investigate approaches to compute the semantic similarity between natural language terms. This paper presents approaches for measuring semantic similarity between words and hierarchical structure is used to present information content. A common data set of word pairs is used and two computational measures are calculated.

37. EXPERIMENTAL ANALYSIS OF NAIVE BAYESIAN FILTER ON DATASETS INCLUDING ENRON, LINGSPAM AND PERSONAL EMAIL MESSAGES

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Keywords: UBE, UCE, Naïve Bayesian Filter, Enron, LingSpam, Personal E-mails.

In the context of email, Spam is defined as Unsolicited Bulk E-mail (UBE) or Unsolicited Commercial E-mail (UCE). Many techniques are used to block these UBE or UCE. Bayesian Filter is widely used filter. In this paper we have carried out experimental analysis of Naïve Bayesian filter on standard dataset Enron and LingSpam. We have also trained and tested this filters on the personal ham and spam emails. Results are discussed with parameters such as accuracy, spam recall and spam precision.

38.   ICT INVESTMENT INTO BANKING SECTOR WITH FOCUS ON INDIA

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Keywords: ICT (Information and Communication Technology), Internet Banking, Electronic banking (E-banking), Mobile banking (M-banking), banks, Business Process Reengineering (BPR), INFINIT

The late 20th century has witnessed the usage of Information & Communication Technology by banks which sharpened and expanded its horizon to managing money and offering different products and services like e-banking, m-banking, ATMs to customers across the world. Technological advancements and changing social trends such as heightened customer pro-activity and increased preferences for convenience have caused intense restructuring of the banking services sector through investment

into ICT infrastructure. While change was glacially slow at first, the pace of evolution has recently been accelerating, and there is no reason at all to think that will stop. The aim of the present paper is to study and find out the rapid development and wide application of Information and Communication Technology (ICT) in banking sector and how ICT investment impacts the banking performance. Through this paper light is also thrown on the future of internet banking and mobilebanking in India.

39. A STUDY ON THE APPLICATION OF CLINICAL DATA WAREHOUSES IN PRODUCTION CONTROL SYSTEMS OF PHARMACEUTICAL PRODUCTS.

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Keywords: OLAP, DSS, SNP, CDS, DMPK

Bioinformatics is global venture in which computer networks allow easy access to biological data and enable the development of software that are aimed at providing gene and protein databases. It facilitates value-added transformation of sequence data by creating high-value intellectual property like validated targets. This article recommends model architecture for clinical informatics, pharmagenomics and bioinformatics information requirements, including attributes, data mobility, data repurposing and data sharing.

Bioinformatics aims at combining cutting-edgemolecular biology with supercomputing is store, retrieve, process, analyze and simulate biological information, i.e. provide tools to turn masses of raw information into knowledge Biological Sciences, especially Genomics and Clinical Sciences, give many more targets than we can deal with [Curtis and Barnes]. The advantage of the abundance of data is that better targeted drug treatments will be possible. On the other hand, the weight of this data is overwhelming to a researcher who is not able to maximize its usefulness. Bioinformatics tools help a researcher realize the maximum potential of the data he has with him. The chief challenges for the bioinformatics industry are:

a.   Better maintenance and usage of large volumes of data.

b.   Better annotation of data

c.   Better filtering and visualization

d.   Use of better algorithms to analyze data and integration of genome and gene expression data more effectively.

Information Management using Data Warehouses: The data warehouse is a repository of integrated information from any number of sources with analysis and querying functions [Ramick, 2001 and Benander and Benander, 2000], The enormous numbers of data and the powerful analytical capabilities that a data warehouse embodies allow users to identify members, plan programs, track patient progress, evaluate programs, and complete an overall financial analysis. Successful implementation of a data warehouse requires planning, designing, and maintaining the data that is a daunting task, considering the vast amounts of information inherent to healthcare organizations.

40. ALGORITHMS FOR DATA RELOCATION

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This work is concerned with the problem related to data storage and management. A large storage system consists of several hundreds of disks. To balance the load across disks, the system computes data designs that are typically adjusted according to the workload. As workloads change over time, the system recomputes the data design, and rearranges the data items according to the new design. We identify the problem of computing an efficient data relocation plan that converts an initial design to a target design.

We define the data relocation problem as follows: for each item, there are a set of disks that have the data item i.e. sources and a set of disks that want to receive the

data item i.e. destinations. We want to transfer the data items from the sources to the destinations. The crucial constraint is that each disk can participate in only one transfer at a time. The most common objective has been to minimize the time of all the relocations. The problem is NP-hard (Non-deterministic Polynomial-time hard), and we develop polynomial time algorithms with constant factor approximation guarantees and several other heuristic algorithms. We present the performance evaluation of the different methods through an experimental study.

We also consider the data relocation problem to minimize the sum of completion time over all relocation jobs. Minimizing the sum of completion times of jobs is one of the most common objectives in scheduling literature. On the other hand, since a storage device may run incompetently while the device is involved in relocations, another interesting objective is to minimize the sum of completion times over all storage devices. We present hardness results and constant factor ballpark figure or approximation algorithms for these objectives.

In addition, we consider the case when we have a dissimilar collection of machines. We assume that dissimilarity is modelled by a non-uniform speed of the sending machine. For the basic problem of multicasting and broadcasting in the model, we show that Fastest Node First scheme gives a ballpark figure ratio of 1.5 for minimizing the time. We also prove that there is a polynomial time approximation scheme.

41.   FUZZY LOGIC IN AN INTERDISCIPLINARY REVIEW AND IMPLEMENTATION IN AFFECTIVE COMPUTING

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Keywords: Affective computing, physiological responses, human-machine interaction, fuzzy logic.

The Affecting computing and Fuzzy Mathematic both are the core focused point of today researchers. Affective Computing research combines engineering and computer science with psychology, cognitive science, neuroscience, sociology, education, psychophysiology, value-centered design, ethics, and more. The latest scien-

tific findings indicate that emotions play an essential role in decision making, perception, learning, and more-that is, they influence the very mechanisms of rational thinking. According to Rosalind Picard, if we want computers to be genuinely intelligent and to interact naturally with us, we must give computers the ability to recognize, understand, even to have and express emotions.

The Fuzzy Logic is a variation on set theory where a variable can partially be an element of a set. It was first developed in the state we know of now by Lofti Zadeh in the 1960's. This approach to set theory was not applied to control system until the 70's due to insufficient small computer capability prior to that time. Fuzzy Logic Controllers are intended to "think" like humans do, in this way they are helpful for problems that cannot easily be set up mathematically, but can easily be expressed in words.

In this paper, we bring together by virtue of survey of work performed and an implementation in individuals with a diversity of technical, artistic, and human abilities in a collaborative spirit to push the boundaries of what can be achieved to improve human affective experience with technology and Fuzzy logic. Fuzzy logic adaptive Model of Emotion named as FLAME manage problems of conflicts in mixtures of emotions those problems not based on Fuzzy logic. This is a functional or interval-based mappings. We proposed an implementation with Fuzzy logic.

42. EXPERT SYSTEM FOR TREATMENT OF JAUNDICE DISEASE BY USING NATURAL METHOD: - KNOWLEDGE TOOLS FOR PHYSICIAN AND GENERAL USERS

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The development of expert system for treatment of Jaundice disease by using natural method is new information technology derived from Artificial Intelligent research using ESTA (Expert System Text Animation) System. We will describe the development of an expert system for Jaundice disease of the human being that can give the information which can be cure naturally with different methods (Massage, Herbal/

Proper Nutrition, Acupuncture, Gems). The proposed expert system contains knowledge about various methods of natural treatment of Jaundice diseases of Human Beings than can be cure naturally. The system will be developed in the ESTA (Expert System shell for Text Animation). The knowledge for the said system will be acquired from domain experts, texts and other related sources.

43. COMPARATIVE STUDY OF THE SPREAD SPECTRUM DCT BASED WATERMARK WITH THE DWT WATERMARK FOR ROBUSTNESS

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Keywords: Pseudo random, HVS, DCT, DWT, sub-image, key

This paper summarizes a comparative study between two widely adopted frequency domain watermarking techniques based on DCT and DWT. Both techniques provide us with distinct advantages in water mark robustness and make the same resilient to different kinds of attacks and distortions. In the DCT based water marking, we choose the spread spectrum watermarking technique which is the most efficient of all DCT based techniques. Here the low frequency components of the image are chosen to embed the watermark. In doing so, we select those DCT coefficients that have comparatively higher values than others. The number of chosen components suitably depends upon the length of the inserted mark. The watermark is a pseudo random noise and it is used to modify the selected DCT components in a manner that appears to be as if the watermark has been spread randomly. Due to choosing the low frequency components the water mark sustains all kinds of filtering attacks and shows getting distorted only when the image itself loses its quality. The watermark also sustains compression and geometric distortions like rotation, clipping and cropping. In DWT based technique however the watermark is inserted in the sub-image. In fact, the main interest in wavelet based techniques is to ensure the imperceptibility constraint taking into consideration the human visual system (HVS) is insensitive to the small changes in the high frequencies. Therefore the water mark is inserted in those parts of the decomposed image. To ensure robustness keys are used to embed and extract the watermark. Here the watermark is inserted in every pixel of the chosen sub- image and therefore altering the original pixel values. Once

all the watermark values are inserted the reverse DWT is used to get back the new sub-image. The technique shows the efficiency in water mark robustness especially with different compression and filtering. However, significant improvement is seen in case of histogram manipulation while compared with the DCT based technique. In the DCT based technique the histograms of the original and watermarked images appear quite different, and this being the changes made in the low frequency region. However, in DWT based technique the two histograms appear quite similar, leaving no room for an attacker to guess the watermark position. The DWT watermark is found stronger than the DCT water mark for attacks like geometric distortion and cropping by calculating PSNR of the extracted water marks. However, one disadvantage is found with the DWT watermark, that the mark has been inserted in the high frequency components for HVS insensitivity, a random high pass filtering may leave with the watermark content slightly modified. Of course, the high frequency region is selected in the sub-image which itself is a low frequency region compared with the other parts of the decomposed image. In DCT based technique we do not get such specific details of the image and therefore insert the mark based on the heuristic that high valued DCT coefficients are the low frequency components of the image. The comparative study shows that DWT water marking technique is superior to DCT watermarking, although no water marking technique could resist all kinds of attacks, particularly the malicious ones, to utmost satisfaction. The results shown reveals the extracted water mark quality for different multimedia attacks in DCT and DWT based techniques with calculated PSNR.

44. DIELETRIC RESONATOR ANTENNA WITH BROADBAND CHARATERISTICS: A POSSIBLE CANDIDATE FOR INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

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Keywords: Dielectric resonator antenna (DRA), Broadband, ICT, & HFSS

Information Technology is playing a crucial role in contemporary society. It has transformed the whole world into a global village, which is increasingly dependent on the creative management and distribution of information. Information technology provides the communication and analytical power that organizations need for conduct-

ing and managing business at global level at faster rate. To co-ordinate their world-wide network of suppliers, distributors and consumers, organizations have developed global information systems that can track orders delivers and payment round the clock. This has been possible because of the development of information technology in the present form. These days, more and more people are travelling round the clock from one city to another city and one country to another country. They need to contact homes and work places while being outside. Keeping the above facts in mind, communication is the conveyance of a message from one entity, called the source of transmitter, to another, called the destination or receiver via a channel of some sort. Therefore, in this presentation, a compact dielectric resonator antenna (DRA) has been presented as a possible candidate for information technology so that the communication systems can be made sophisticated and more reliable for people. During, the course of investigation, the numerically obtained results and simulated results have been compared and found in good agreement. The simulation process has been made using HFSS (HIGH FREQUENCY STRUCTURE SIMULATOR) software and HP 8719A network analyzer.

45. EVALUATION OF FDPM- FINDING THE REAL SOURCE OF ATTACKS

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Shridevi Institute of Engineering & Technology, Tumkur.

Keywords: DDoS attacks, IP traceback, performance evaluation, routers, security.

Internet Protocol (IP) traceback is the enabling technology to control Internet crime. In this paper, we present a novel and practical IP traceback system called Flexible Deterministic Packet Marking (FDPM) which provides a defense system with the ability to find out the real sources of attacking packets that traverse through the network. While a number of other traceback schemes exist, FDPM provides innovative features to trace the source of IP packets and can obtain better tracing capability than others. In particular, FDPM adopts a flexible mark length strategy to make it compatible to different network environments; it also adaptively changes its marking rate according to the load of the participating router by a flexible flow-based marking scheme. Evaluations on both simulation and real system implementation demonstrate that FDPM requires a moderately small number of packets to complete

the traceback process, add little additional load to routers and can trace a large number of sources in one traceback process with low false positive rates. The built-in overload prevention mechanism makes this system capable of achieving a satisfactory traceback result even when the router is heavily loaded. The motivation of this traceback system is from DDoS defense. It has been used to not only trace DDoS attacking packets but also enhance filtering attacking traffic. It has a wide array of applications for other security systems.

46. A COMPACT SLOT AND INVERTED STAIRCASE DIELECTRIC RESONATOR-ON-PATCH (ISDROP) ANTENNA FOR WIRELESS COMMUNICATION APPLICATIONS AT 3.06GHZ.

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Keywords: Compact Slot, Inverted Staircase Dielectric Resonator (ISDROP) Antenna, Patch, Microstrip fed

Abstract- This paper presents a compact slot, extended bandwidth inverted staircase dielectric resonator-on-patch antenna for wireless communication applications which are suitable to work at 3.06 GHz. Dielectric materials used in the design is in form of inverted staircase type. Two concentric ring patches around a disk patch is used to partially cover the top surface of the dielectric resonator material. ISDROP antenna is excited through the micro strip line fed rectangular slot. The proposed antenna is designed and simulated on HFSS (High Frequency Structure Simulator) to effectively observe its behavior. The bandwidth of ISDROP antenna is found to be around 67%.

47. GRID SERVICES USING WSDL-S AND QoS BASED MATCHMAKING ALGORITHM

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Keywords: Grid Architecture, WSDL-S, QoS

The Grid Architecture defined in different presentations to facilitate flexible, secure and coordinated resource sharing among dynamic collections of individuals, institutions and organizational resources.

This paper reviews the problem of recitation and realizing grid services semantically in a heterogeneous grid environment. We aim a matchmaking system that enables semantic descriptions of grid services using WSDL-S. Also, the matchmaking algorithm aimed in our system uses weighted QoS factors to match requests with service advertisements. The semantic likeness between the requested capability and that of the advertised ones is determined using the respective domain ontology. We also propose ontology clustering to group similar types of advertisements so that service discovery becomes fast and accurate.

The matchmaking system aimed in this paper uses WSDL-S to add semantics to the grid service perception. The service matchmaking algorithm concludes knowledge from the description to discover closely related services. We employ user-defined weighted QoS features to obtain the suitable services that meet the user's requirements.

48. ARTIFICIAL NEURAL NETWORK AND ITS APPLICATION TO SOFTWARE EFFORT ESTIMATION

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Keywords: Effort Estimation, Artificial Neural Network, NNtool, MMRE,SDLC

Failures of software are mainly due to the faulty project management practices, which include effort estimation. Continuous changing scenarios of software development technology makes effort estimation more challenging. Ability of ANN(Artificial Neural Network) to model a complex set of relationship between the dependent variable (effort) and the independent variables (cost drivers) makes it as a potential tool for effort estimation. Role of different ANN in effort estimation have been simulated using MATLAB10 NNTool on NASA dataset. All four ANN are trained using "trainlm" algorithm. The results from simulation indicates that cascade feed- forward neural network give the best performance.

49. COMPARATIVE STUDY OF METHODS DETECTING VEHICLE LICENSE PLATE RECOGNITION SYSTEM

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Maranga, Purnea, Bihar

Keywords: Pattern Recognition, Standard Hough Transform, Smoothing, Image Masking.

The purpose of this article is to develop a real time application which detects license plate recognition from the gate, for example, entrance at the parking area or a border crossing. The system is based on regular PC with video camera, catches video frames which include visible license plate and process them. Once the license plate is rec-

ognized its digits are recognized and displays in the user interface or checked against the database. The focus is on designing of algorithms used for extracting the license plate from the image and identifying the characters of the license plate individually. The proposed system has been implemented by using Vision Assistant 7.1 and LabVIEW 7.1. The performance of this system is investigated about 100 vehicles. The similar system has been executed in Matlab 7.0. The result of the both the softwares has been compared.

50. SOFTWARE DEVELOPMENT: THE IMPACT OF TROUBLESHOOT-ING BUGS

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Keywords: Bug, interface, modules, coupling, modularity, extensibility, access path, testing, project, integration.

Most of the Enterprise Edition based application servers are increasingly becoming the engine rooms of web enabled distributed applications. They provide scalable, high-performance for processing many simultaneous requests from users. They also offer a consistent design and deployment model, and various software components that aim to the development of complex internet-based applications. Bug Tracker is a method used to keep track of the bugs occurred while testing the projects. It makes the work of recording all the details of the bugs a pattern wise easy. In this paper we are focusing to provide user interface. This experimental technique will be build for software managers, engineers and quality assurances that keep track of software bugs for multiple projects with independent user login.

51. PLANNING PHASE : NETWORKING SERVICE INDUSTRIES

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Keywords: network operator; networking; network user; topology requirements; active node; telecommunication networks, IP address.

Network method is designed according to requirements and location of site place. During this we have collected more & more information regarding office functionality, present system and expectation from computer network which is to be analyzed. We have tried to consider each & every points, which is important during analysis phase of network. We have also considered cost factor, which plays important role during implementation of network in any company. We got more practical knowledge about network concept during implementation and trouble shooting of networking.

52. OPPORTUNITIES AND CHALLENGES IN BRAIN-COMPUTER INTERFACES(BCI)

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Keywords: Brain-Computer Interface, Human-Computer Interfaces, Electroencephalography(EEG), Neuroprostheses, Neurorehabilitation, Virtual Reality.

This paper deals with the state of the art of brain-computer interfaces(BCI). Currently, the possibilities for using BCIs in real-life applications are taking shape. Brain computer interfaces are systems that use electric, magnetic brain signals to control external devices such as computers, switches, wheelchairs, or neuroprostheses. While BCI research endeavors to create new communication channels for severely handicapped people using their brain signals, recent efforts also have been focused on developing potential applications in rehabilitation, multimedia communication, vir-

tual reality, and entertainment/ relaxation. In addition to helping better understand how the human brain works, the brain-computer interface allows researchers to develop a new class of bioengineering control devices and robots, exploring possibilities for advanced human-computer interfaces. BCI technology is an exciting and challenging research area. On the way to digital immortality and mental control, there are many hurdles to overcome. How can brain signals be sensed both noninvasively and efficiently? How can researchers process and interpret these signals? Such challenges and opportunities are presented in this paper.

53. ARTIFICIAL NEURAL NETWORK-WORKING & APPLICATIONS

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Keywords: Artificial Neural network, Neurons, Synapse, Cardiovascular System

Now a days a great challenge in the computing world. Today technology is not a plane but technology is hybrid. Scientist, Researchers are looking two Technologies jointly. Just now Man & Machine This paper gives an overview of the Artificial neural network .The working of human brain and how that human brain working is implemented in machine through Artificial neural network. Examples of artificial neural network working in the medical field are discussed in the paper.

54. FEMTOCELLS - SAVING OUR ENVIRONMENT

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Keywords: Macrocell; Femtocell; Received power of a mobile terminal; Total transmission power; Electromagnetic Radiation

The use of mobile phones is increasing with each passing day as this wireless device allows us to keep connected to all at all times as mobility is not a constraint for this device like our old wired landline phones. But this increase has led to the destruction of the biotic components of our ecosystem, thereby disturbing our environment. This is because of the harmful effects of the electromagnetic radiations, emitted from the base stations of macrocells of the cellular network during call sessions. In this paper, it is shown that the total transmission power of a mobile phone network covered by femtocells ,meant for providing coverage in smaller areas, is much less than that when covered by macrocells, which means reduced electromagnetic emissions, thus safeguarding our environment.

55.   ANALYSIS OF SINGLE FEED CIRCULARLY POLARIZED MICROSTRIP ANTENNAS

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Keyword: Microstrip antenna and   feed location

The modern trends in wireless communication systems require wide bandwidth antennas by which the voice, data and video information can be transmitted. Some of these wireless communication system applications include fixed broadband local multipoint communication services. In this paper, a novel circularly polarized (CP) microstrip antenna with a single coaxial feed with an improved CP bandwidth is described. In the proposed antenna, the two orthogonal modes occupy different cavi-

ties and the goo phase difference between the modes is achieved by coupling holes between the low resonant cavities. The CP design procedure is independent of the feed location.

56. IMPORTANCE OF INFORMATION AND COMMUNICATION TECHNOLOGIES FOR DEVELOPMENT OF RURAL ECONOMY

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Keywords: Computer, MS-Excel, PowerPoint, MS-Word, internet, C++, Java, E-mail, ICT, ICTD4 www, e-Governance, Rural Economy.

An intensive investigation showed that Information and Communication Technology (ICT) applications in the recent   past have demonstrated the importantrole to play the realm of rural development. Several e-governance projects have been undertaken to improve the reach, enhance the base, minimize the processing costs, increase transparency and reduce the cycle times. Several states have initiated the creation of State Wide Area Networks (SWAN) to facilitate electronic access to the state and district administrative services to the people in villages. It has been found that significant efforts are required to design, develop, and implement the ICT solutions through well managed reengineering at back end processes and capacity building efforts to sustainability. Suitable public private partnership models are used to ensure rapid development and cost effective solutions. The ICT, World Wide Web (WWW)   and   multi-dimension applications of the Internet potential made the possibility of providing services at any time, anywhere and management through e-enabled services, leading to e-governance was found a successful mission. The object of the present investigation was to development of rural economy through   the help of Computer, MS-Excel, PowerPoint, MS-Word, Internet, C+++, Java, E-mail, ICT, ICT4D, www, e-governance.

57.   AUTOMATA THEORY APPROACH FOR SOLVING FREQUENT PATTERN DISCOVERY PROBLEMS

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Keywords: Frequent pattern discovery, graph mining, pushdown automaton,   sequence mining,   state machine, tree mining.

The various types of frequent pattern discovery problem, namely, the frequent item set, sequence and graph mining problems are solved in different ways which are however, in certain aspects similar. The main approach of discovering such patterns can be classified into two main classes, namely, in the class of the level wise methods and in that of the database projection-based methods. The level-wise algorithms use in general clever indexing structures for discovering the patterns. In this paper a new approach is proposed for discovering frequent sequences and tree-like patterns efficiently that is based on the level-wise issue. Because the level-wise algorithms spend a lot of time for the sub pattern testing problem, the new approach introduces the idea of using automaton theory to solve this problem.

58.   ENERGY-EFFICIENCY AND STORAGE FLEXIBILITY IN THE BLUE FILE SYSTEM

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Keywords: Frequent pattern discovery, graph mining, pushdown automaton, sequence mining, state machine, tree mining.

A fundamental vision driving pervasive computing research is access to personal and shared data anywhere at any time. In many ways, this vision is close to being realized. Wireless networks, such as 802.11, offer connectivity to small, mobile devices. Portable storage, such as mobile disks and USB key Chains, let users carry several gigabytes of data in their pockets. Yet, at least three substantial barriers to

pervasive data access remain. First, power-hungry network and storage devices tax the limited battery capacity of mobile computers. Second, the danger of viewing stale data or making inconsistent updates grows as objects are replicated across more computers and portable storage devices. Third, mobile data access performance can suffer due to variable storage access times caused by dynamic power management, mobility, and use of heterogeneous storage devices. To overcome these barriers, we have built a new distributed _le system called BluerFS. Compared to the Coda _le system, BlueFS reduces _le system energy usage by up to 55% and provides up to 3 times faster access to data replicated on portable storage.

59. SORTING ALGORITHM "ZIGZAG SORT"

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Keywords: Sorting, swapping, data structure

This paper proposes a new sorting technique, "Zigzag Sort" exclustvely developed to sort an odd number of elements. The initial pass involves scanning elements in the left-to-right direction pair-wise and swapping elements in each pair as per the necessity to keep elements in each pair in the sorted order with keeping the last element unprocessed. The next pass involves the identical approach in the reverse direction. Thus in a zigzag way, one in the left-to-right direction, followed by the next in the right-to-left direction, a maximum of n passes are executed to sort n elements offering the complexity of O(n2).

60. E-HEALTH - AN INCLUSIVE INNOVATION IN RURAL INDIA

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Keywords: Challenges, e-health, healthcare, information communication technology, rural areas

The applications of e-health solutions have brought a remarkable growth in the health care industry. E-health solutions have already been embraced in the urban sectors. In this paper, a small introduction about e-health is given along with its history in a condensed form and its efficiency is lauded. The initiatives taken in urban India are mentioned, but we have emphasized the usage of e-health in rural India. The various challenges posing barriers to the use of ICT technologies in rural areas have been marked and the suggestions on how to tackle the various challenges have been addressed in this paper. We see the vital role of computer science in revolutionizing our world.

61. AN OPEN SOURCE APPROACH IN EDUCATING PARTICLE IMAGE VELOCIMETRY

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In a country like ours, where the economy is drive by the monsoon; it is imperative to understand the dynamics of water flow even at school level. Understanding and study of fluid mechanics is essential for not only industrial and commercial applications but our day to day activities like irrigation, sewer collection, flood, water distribution, piping, heating, ventilation etc beside air conditioning systems, aerodynamics, and power generation. It is sad that fluid dynamics is considered as only a mechanical engineering subject. The comprehensive theoretical treatment of the computational fluid dynamics (CFD) is be needed for engineering studies but an experimental understanding needs to be built at secondary school level and especially urban students. Student must be ready to visualize the flow patterns and its

changes due to increase in flow rate, introduction of obstruction and other basic concepts. Flow visualization with these elements provides an excellent opportunity for visual appreciation of the complexity of flow phenomena. Visualization experiments can be used to enhance the learning experience and improve understanding on the concepts like flow path line, path distortion, stream lines, vortex formation, jet, wake etc. A new technique is devised to visually enhance the flow patterns so that it will have deep and long lasting impact on basics flow understanding in student.

62. IMPORTANCE OF MDM FRAMEWORK IN CLOUD ERA

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Cloud is the buzz word now. Cloud is the next generation architecture in the field of Information and Communication Technology (ICT). Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction. As the organizations already have many applications running on their own systems and now moving to cloud for the new business applications, it is important for cloud applications to couple with existing applications. Also this is the major challenge being faced, to make the cloud adoption as a successful initiative. To manage complex data management scenario, and to protect data as an enterprise   asset, organization needs a robust and comprehensive data governance program in place. This paper, explains how an effective   master data management initiative needs to establish standards, process and data governance program to add tremendous value to cloud adoptions of organizations. This study will help to build a conceptual   model that powers cloud adoption and make its implementation more successful, effective and efficient.

63.   RISKS OF COMPUTER CRIME, VULNERABILITIES OF INFORMATION SYSTEMS, AND MANAGING TECHNOLOGY

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Keywords: Information system, Managing Technology & Computer crime

With the popularization of the Internet, interest in computer crime, ethics, and privacy has gained momentum. News items describe identity the credit cards   numbers   posted on   chat   rooms,   and child pornography   websites.

Investigations have yet to reveal the extent or perpetrators. However, affected individuals   have   already   experienced   fraudulent   financial   transactions on personal accounts. The rich and famous are not exempt from such experiences. Information   systems   vulnerabilities cover   more territory   than just personal losses. Computer   information systems   are   vulnerable   to physical   attacks, electronic hacking, and natural disasters. With   computer   information   systems serving as the vital lifeblood of many organizations, managers must be aware of the both   the   risks   and   the   opportunities to minimize   the   risks   to   information systems. In this paper, discussion is divided into types of computer crime, information systems and technology vulnerabilities, and ways to manage the risks.

64. BIO-SENSOR MODULE WITH MOBILE ENHANCED TECHNOLOGY IN HEALTHCARE

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Keywords: Food database, Christina theory, 138 module with appointment access.

In this work, a new application has been proposed on mobile for the well being of heart incorporating with mobile stethoscope. It is called as "Mobile Steth" (MS) with automatic application for suggesting the food and heart related problems and in

the case of accident. It will record the user datum and the critical label will be checked. If the subject (patient) reaches the critical label, MS will initiate an alarm to their family members and fix the appointment in the nearest hospital. Comparison of Christina schemes for HCN, RVP & heart patients and based on the above values, performance has been evaluated. However, it is efficient from view of application and provides health security for all heart patients.

65. REQUIREMENT ANALYSIS OF SOFTWARE PROJECTS

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Keywords: Requirements, analysis , eliciting requirements, types of requirements, Software evolution

Requirements Evolution is one of the main issues that affect development activities as well as system features (e.g. system dependability). Although researchers and practitioner recognize the importance of requirements evolution, research result and experience are still patchy. This point out lack methodologies that address requirement evolution. Empirical analysis of industrial case studies highlights software requirements evolution as an important issue. Unfortunately, traditional requirements engineering methodologies provide limited support to capture requirement evolution. Heterogeneous engineering provides a comprehensive account of system requirements. Heterogeneous engineering stresses a holistic viewpoint that allows us to understand the underlying mechanisms of evolution of socio-technical systems. Requirements, as mapping between socio-technical solutions and problems, represent an account of history of socio-technical issues arising and being solved within industrial settings.

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