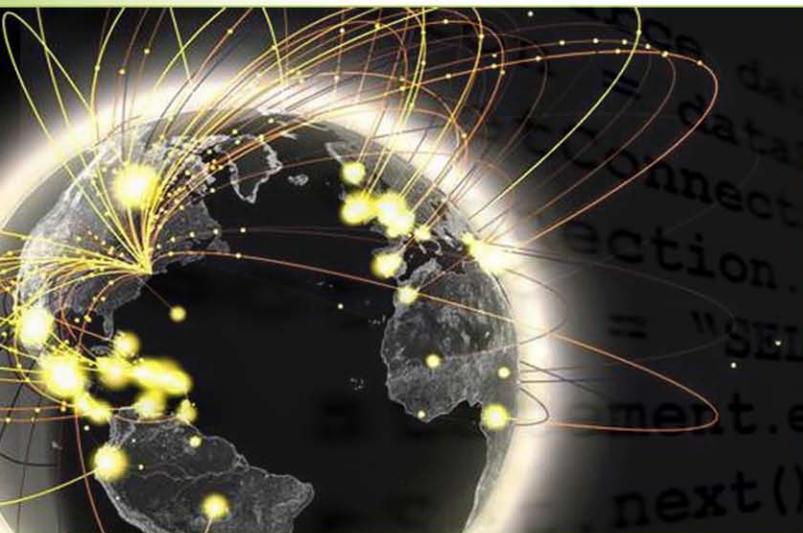


National Conference  
on  
**COMPUTER COMMUNICATION  
AND  
INFORMATICS (NCCCI 2011)**

11<sup>th</sup> February 2011



**SCHOOL OF COMPUTER STUDIES**  
**RVS College of Arts & Science (Autonomous)**  
**Sulur, Coimbatore - 641 402.**

**NATIONAL CONFERENCE ON COMPUTER  
COMMUNICATION AND INFORMATICS**

**NCCCI 2011**

**ABSTRACTS**

**11<sup>th</sup> February, 2011**

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**SCHOOL OF COMPUTER STUDIES**

**RVS College of Arts and Science (Autonomous)**

**(Affiliated to Bharathiar University, Re-accredited by the NAAC  
and ISO 9001:2008 Certified Institution)**

**National Conference on  
Computer Communication and Informatics  
(NCCCI 2011)**

**11<sup>th</sup> February, 2011**

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## MESSAGE

I am extremely delighted to learn that the School of Computer Studies has planned to conduct a National Conference on **Computer Communication and Informatics** (NCCCI 2011) on 11<sup>th</sup> February, 2011. We are in an era of Information technology. This technology has strongly influenced various fields and frontiers, the world over, evoking stupendous changes signifying spectacular progress and development in humanity. It is highly relevant to foresee its possible future trends in the light of the problems, intricacies and hurdles confronting it. Moreover it becomes imperative to analyse and expel the negative technical aspects, afflicting the technology by ways of abuse and misuse. Perfection of information technology bereft of its associated evils is the pressing need of the hour. I am confident that the deliberations of this Conference will cut many Gordian knots, in ensuring solutions to problems entangling this vital domain.

I wish the Conference grand success.

**Dr P Thirunavukkarasu,**  
**Principal,**  
**RVS College of Arts and Science,**  
**Sulur, Coimbatore - 641 402.**

## FOREWORD

Today the technology has become astonishingly advanced. Undoubtedly the entire credit goes to Science, which consistently keeps on unraveling the riddles, knots of mysteries and perplexing paradoxes of life, matter, and universe. The present scientific achievements reflecting the unprecedented technological feats are the outcome of Science extricating just the hind finger of the closed fist of obscurity. Unfolding of the other fingers would lead to unimaginable accomplishments on the part of humanity. The discovery of computer and genesis of software industry is a spectacular boon to humanity marking a mega milestone along the march of Science.

Between the agricultural and industrial revolutions there was a very long gap. But since, industrial revolution other incredible changes have ensued at a faster rate. Now the world is under the steady grip of "grey revolution" (Internet era) which has splendidly shortened time and distance, making impact in all fields and frontiers.

Today India is considered as a hub of IT world and technology after U.S. Emphasis and thrust on professional technical education and initiation of strings of professional technological institutes all over India, trained skillful man power, techno savvy fluently English speaking trainable youth and brilliant sustenance of Software industry by Government policies have prompted the Software industry to reach its excellence.

Today India exports software services to more than 95 countries with two thirds to U.S. We are able to catch up to the technological standards of global leaders while others in the developing world lag behind. A conducive and congenial climate prevails in India for the promotion of Software industry. NASSCOM has recently identified fifty cities for IT sector besides Delhi, Bangalore, Hyderabad, Pune, Chennai and Coimbatore.

## **A Study on Detection and Classification of Network Intrusion using ILACR**

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With the frequent changes in network environments, managing and updating the rule-based system has become a very challenging task for the administrator. Usually, rule-based systems work to make sense of a huge amount of alerts generated by the intrusion detection systems (IDSs) every minute. Intrusion detection faces a number of challenges; an intrusion detection system must reliably detect malicious activities in a network and must perform efficiently to cope with the large amount of network traffic. In this paper, we address these two issues of Accuracy and Efficiency using Conditional Random Fields and Integrated Layered Approach [ILACR]. We demonstrate that high attack detection accuracy can be achieved by using Conditional Random Fields and high efficiency by implementing the Integrated Layered Approach. Finally, we show that our system is robust and is able to handle noisy data without compromising performance.

To thrive well, software industry requires right solutions, proper management, good infrastructure and dedicated people. For Software industry to be highly successful four critical factors namely Man power, Money, Marketing and Management are imminent and have to be scrupulously considered.

Challenges and changes are rampant and inherent in all fields but more so in software industry. For instance, "Web" was a passive experience at first. But later it became interactive and participative with provision of financial services, travel information, entertainment and information products. Web is changing the old pattern of information service and more the world of software. Presently supply of Software is mostly by downloading. It is predicted that the concept of software product will become obsolete and in future programme units will be supplied online, on demand and levied according to use. Hence the challenges have to be encountered and the changes to be adopted.

I am confident that the National Conference titled **Computer Communication and Informatics** (NCCCI 2011), organized by the School of Computer Studies, RVS College of Arts and Science on the 11<sup>th</sup> February 2011 will address threadbare of all the problems, challenges and hurdles confronting the future information technology in all possible angles and right perspectives. My hearty congratulations to the organizers and all best wishes to the participants of the various technical sessions.

My prayerful wishes for the Conference to be eventful, fruitful and successful.

**Dr H Mohamed Mubarack**

**Advisor,**

**RVS College of Arts and Science,**

**Sulur, Coimbatore - 641 402.**

## ACKNOWLEDGEMENT

We wish to express our sincere gratitude to the management of RVS College of Arts and Science for providing us with an opportunity in organizing the National Conference on **Computer Communication and Informatics (NCCCI 2011)**. We express our heartfelt thanks to the Chief Guests, the Lead Speakers and Chairs of the Technical Sessions. We thank all the academicians and researchers from various Universities and Colleges across the Country for their active participation and presentations in this Conference. We thank the reviewers of the technical papers presented in this Abstract. We also thank the students of the School of Computer Studies for their active and enthusiastic participation and co-operation in hosting this Conference. We are highly indebted to our Principal and Advisor for their support and suggestions. We also thank all the non-teaching staff for their support towards the successful conduct of this Conference. Our thanks are also due to those who were behind the screen and assisted us during the preparatory stages as well as during the conduct of the Conference. Thank you one and all.

**School of Computer Studies  
RVS College of Arts and Science,  
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## Reducing Power Consumption in SRAM (VLSI -Based)

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In the modern word people are like to do the process faster and the same time with the high performance that to in the technical field there is strong demand for SRAM with lower power consumption while achieving high performance and high density. However, the large increase of process variations in advanced MOS technologies is considered one of the biggest challenges for SRAM designers. In the presence of large process variations, SRAMs are expected to consume larger power to ensure correct read operations and meet yield targets. We propose a new architecture that significantly reduces the array switching power for SRAM. The proposed architecture combines builtin self-test and digitally controlled delay elements to reduce the wordline pulsewidth for memories while ensuring correct read operations, for the BIST input method we are using the encoding and decoding method because in this method we can avoid the data over flowing in the virtual memory. We are reducing in array switching power can be achieved for maximum level that is 95% previous technology achieved only the minimum level that is 27%. We can see the Simulation results in ModelSim 6.2c and for the simulation and Implementation Xilinx ISE 9.1i.

## **Role of Data Mining Knowledge Discovery in Database**

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Knowledge discovery and data mining (KDD) is an interdisciplinary area focusing upon methodologies for extracting useful knowledge from data. The ongoing rapid growth of online data due to the internet and the widespread use of databases have created an immense need for KDD methodologies. In this paper, I provide an overview of common knowledge discovery tasks and approaches to solve these tasks. The challenge of extracting knowledge from data draws upon research in statistics, databases, pattern recognition, machine learning, data visualization, optimization, and high-performance computing, to deliver advanced business intelligence and web discovery solutions. Finally, I specify features that we consider important for knowledge discovery software to possess in order to accommodate its users effectively, as well as issues that are either not addressed or insufficiently solved yet.

## **Motion Detection Based Interactive Surveillance Systems for Mobile Clients**

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Surveillance systems provide the capability of collecting authentic and purposeful information and forming appropriate decisions to enhance safety. In a general video surveillance system, video streams from cameras are sent to a control center and operators monitor the videos. But human operator monitoring of the views every moment of every day is almost impossible; Mobile video surveillance represents a new paradigm that encompasses, on the one side, video acquisition and, on the other side, especially at the same time image viewing, addressing both computer-based and mobile-based surveillance. It is based on JPEG 2000 still image compression format is attractive because it supports flexible and progressive access to each individual image of the pre-stored content, It supports still image creation on the basis of motion detection technique which enables efficient utilization of resources. The paper is concluded with concise summary and the future of surveillance systems for public safety.

## **PMG Based Handoff in Wireless Mesh Networks**

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The wireless mesh network (WMN) has recently emerged as a promising technology for next-generation wireless. In WMN each mesh client has a Mobile Agent (MA) residing on its registered mesh router to handle the handoff signaling process. We proposed, handoff management for IP-based WMNs remains largely unexplored. Conventional handoff mechanisms can cause significant performance degradation when directly applied to WMNs due to overlooking the key features of WMNs. The proposed Planned Multicast Group (PMG)-based architecture can facilitate cross-layer handoffs and hence reduce the total handoff delay caused from multiple layers. Extensive simulations are conducted to evaluate the feasibility and efficiency of the proposed PMG approach.

## Cloud Computing and Various Workflow Scheduling Algorithms

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Cloud computing has become an area of increasing interest. Cloud computing has many unique advantages, such as low cost, scalability, reliability and fault-tolerance, which can effectively facilitate the execution of workflows. This paper focuses on algorithms for scheduling cloud workflows in different cloud computing environments built on different system infrastructures. Also this paper aims at comparing the two major workflow scheduling such as Best-effort based workflow scheduling and QoS-constraint based workflow scheduling.

## Supportive Secondary Authorization Recalling to Avoid Network Delays

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As enterprise systems, Grids and other distributed applications extent the complexity in their authorization infrastructures-mostly on the request response model which facing the challenges of fragility and poor scalability. We propose an approach where each application server recalls previously received authorization responses and shares that response into other application servers. It can mask authorization server failures and network delays. This paper presents the design of our supportive secondary authorization recalling system and its evaluation using simulation and prototype implementation. The results demonstrate that our approach improves the availability and performance of authorization infrastructures.

## **Semantic Web Search Engine for Improving Search Accuracy using Relation Based Page Rank Algorithm**

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Search engine is a program that searches web pages for specified keywords and returns a list of the web pages where the keywords were found, although search engine is really a general class of programs. Because of general nature of search engine, result set will have useless pages. Semantic search improves search accuracy by understanding searcher intent and the contextual meaning of terms as they appear in the searchable dataspace, whether on the Web or within a closed system, to generate more relevant results. Several search engines has been proposed to improve accuracy in result set using semantic search concept. However, in order to rank results, most of the existing semantic search based search engine need to work on the whole annotated knowledge base. In this paper, we propose a relation-based page rank algorithm to be used in conjunction with semantic web search engines that simply relies on information that could be extracted from user queries and on annotated resources. Relevance is measured as the probability that a retrieved resource actually contains those relations whose existence was assumed by the user at the time of query definition.

## **Multicast Resource Routing Algorithms in Networks**

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Multicast services have been increasingly used by various continues media applications. The QoS requirements of these continues media applications prompt the necessity for QoS-driven, constraint-based multicast routing. This paper provides an overview of multicast routing problems, which are classified according to their optimization functions and performance constraints, of multicast source routing algorithms, which are used to solve Steiner and constrained Steiner tree problems. An example of algorithm also is introduced in order to make the understanding of solving multicast routing problem better. A summary and possible future research directions are pointed out in the end of this paper.

## Distributed k-Means Clustering over a Dynamic P2P Network

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Data mining over the large distributed p2p system is critical. Monolithic data mining algorithms cannot be used for the large distributed systems like p2p systems. Since the large data types and huge data were distributed over a large system monolithic data mining system will not work out for such kind of situations. This paper considers the K-Means clustering for the distributed data mining over the large peer to peer network. The algorithm designed for operation of the dynamic p2p network that can produce clustering in the local synchronization. This paper gives the comprehensive study about the distributed mining over the p2p network.

## Image Compression using Vector Quantization

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In this paper an image compression algorithm is based on the Vector Quantization and adopts the idea of Region-Of-Interest. The image to be compressed is first segmented into regions and a separate codebook is used for compressing every region. The size and the number of codewords may be different in the codebooks according to the diagnostic importance of the corresponding image region. This permits to create appropriate codebooks with representative codewords, and to obtain good reconstruction quality in relevant zones, while reinforcing the compression in less important regions. The proposed approach is tested on ultrasound esophagus images and is shown to be very promising.

## Spatial Domain Techniques in Image Enhancement

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Image enhancement improves the quality (clarity) of images for human viewing. Removing blurring and noise, increasing contrast, and revealing details are examples of enhancement operations. In this paper the comparative analysis of various Image Enhancement techniques is presented. It has been shown that the image enhancement approach performs better under almost all scenarios. Evaluation of the images showed that under Spatial Domain Techniques such as Gray Level Transformation, Spatial Filtering, Histogram equalization. In this paper, several Spatial Domain Techniques are compared.

## **Video Data Mining using Chameleon Algorithm**

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Video Content is always huge by itself with abundant information. Extracting explicit semantic information has been extensively investigated such as object detection, structure analysis and event detection. However, little work has been devoted on the problem of discovering global or inexplicit information from the huge video stream. The video is a particular media embedding visual, motion, audio and textual information. The indexing process must be automated in order to build a dictionary of images region. This process is carried out in various steps. One such important step is Clustering ,which is data mining is the process of discovering groups in a dataset. In this paper,we attempt to give a comparative study of existing algorithms suitable for video data mining.

## **Personality and Emotion-Based High-Level Control of Affective Story Characters**

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Human emotional behavior, personality, and body language are the essential elements in the recognition of a believable synthetic story character. This paper presents an approach using story scripts and action descriptions in a form similar to the content description of storyboards to predict specific personality and emotional states. By adopting the Abridged Big Five Circumplex (AB5C) Model of personality from the study of psychology as a basis for a computational model, we construct a hierarchical fuzzy rule-based system to facilitate the personality and emotion control of the body language of a dynamic story character. The story character can consistently perform specific postures and gestures based on human personality type. Story designers can devise a story context in the form of our story interface which predictably motivates personality and emotion values to drive the appropriate movements of the story characters. Our system takes advantage of relevant knowledge described by psychologists and researchers of storytelling, nonverbal communication, and human movement. Our aim is to facilitate

## **A Co-clustering Model using Cross-domain Text Classification through Wikipedia**

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Traditional approaches to document classification require labeled data in order to construct reliable and accurate classifiers. Unfortunately, labeled data are seldom available, and often too expensive to obtain. Given a learning task for which training data are not available, abundant labeled data may exist for a different but related domain. One would like to use the related labeled data as auxiliary information to accomplish the classification task in the target domain. Recently, the paradigm of transfer learning has been introduced to enable effective learning strategies when auxiliary data obey a different probability distribution. A co-clustering based classification algorithm has been previously proposed to tackle cross-domain text classification. In this work, we extend the idea underlying this approach by making the latent semantic relationship between the two domains explicit. This goal is achieved with the use of Wikipedia. As a result, the pathway that allows propagating labels between the two domains not only captures common words, but also semantic concepts based on the content of documents. We empirically demonstrate the efficacy of our semantic-based approach to cross-domain classification using a variety of real data.

## **Exploring Uncertainty and Reputation Management in MANETS**

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Evaluating and quantifying trust stimulates collaboration in mobile ad hoc networks (MANETs). Many existing reputation systems sharply divide the trust value into right or wrong, thus ignoring another core dimension of trust: uncertainty. As uncertainty deeply impacts a node's anticipation of others' behavior and decisions during interaction, we include uncertainty in the reputation system. One of the important characteristics of MANETs, to efficiently reduce uncertainty and to speed up trust convergence. The mobility-assisted uncertainty reduction scheme is provided: the proactive schemes exploit mobile nodes to collect and broadcast trust information to achieve trust convergence. The scheme offers a controllable trade-off between delay, cost, and uncertainty. Further, we use a clustering in the proactive scheme for reduce the uncertainty in mobility.

## Image Retrieval Based on Clue

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Typical content-based image retrieval (CBIR) system-query results are a set of images sorted by feature similarities with respect to the query. However, images with high feature similarities to the query may be very different from the query in terms of semantics. This is known as the semantic gap. We introduce a novel image retrieval scheme CLUster-based rEtrieval of images by unsupervised learning which tackles the semantic gap problem based on a hypothesis: semantically images tend to be clustered in some feature space. CLUE attempts to capture semantic concepts by learning the way that images of the same semantics are similar and retrieving image clusters instead of a set of ordered images. Clustering in CLUE is dynamic. In particular, clusters formed depend on which images are retrieved in response to the query therefore; clusters give the algorithm as well as the user's semantic relevant clues as to where to navigate. CLUE is a general approach that can be combined with any real-valued symmetric similarity measure. Thus it may be embedded in many current CBIR systems. Experimental results based on a database of about 60,000 images from COREL demonstrate improved performance.

## Effectual Propose of Cloud Computing through Autonomic Workload Execution

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Cloud computing provides services to potentially numerous remote users with diverse requirements. Although predictable performance can be obtained through the provision of carefully delimited services, it is straightforward to identify applications in which a cloud might usefully host services that support the composition of more primitive analysis services or the evaluation of complex data analysis requests. In such settings, a service provider must manage complex and unpredictable workloads. This paper describes how utility functions can be used to make explicit the desirability of different workload evaluation strategies, and how optimization can be used to select between such alternatives. The approach is illustrated for workloads consisting of workflows or queries.

## **A Novel Approach for Preserving Privacy in Grids using Ontologies**

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The use of data Grids for sharing relevant data has proven to be successful in many research disciplines. However, the use of these environments when personal data are involved (such as in health) is reduced due to its lack of trust. There are many approaches that provide encrypted storages and key shares to prevent the access from unauthorized users. However, these approaches are additional layers that should be managed along with the authorization policies. Our proposed access control systems allow quick and easy deployments, and privacy protection. The systems are scalable, and support interoperability and fine-grain access control. Administration overheads for the resource providers are reduced because they do not need to maintain the individual user information. Moreover, our system allows unauthorized requests to be denied before establishing a connection to the resource, thereby reducing the connection overheads and making the data resources to be available to authorized users. Web Ontology Language (OWL) is used to represent the ontology of the data resources and users. By using ontology, VOs can resolve the differences in their terminologies and specify access control policies based on concepts and user roles, instead of individual data resources and user identities.

## **Load Balance Between p2p Systems Based on New Algorithms**

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Load balancing is a critical issue for the efficient operation of peer-to-peer networks. We give new protocols for several scenarios, whose provable performance guarantees are within a constant factor of optimal. First, we give an improved version of consistent hashing, a scheme used for item to node assignments to the Chord system. In its original form, it required every network node to operate  $O(\log n)$  virtual nodes to achieve a balanced load, causing a corresponding increase in space and bandwidth space. Our protocol eliminates the necessity of virtual nodes while maintaining a balanced load. Improving on related protocols, our schemes allows for the deletion of nodes and admits a simpler analysis, since the assignment do not depend on the history of the network. We then analyse a simple protocol for load sharing by movements of data from higher loaded to lower loaded nodes. This protocol can be extended to preserve the ordering of data items. As an application, we use the last protocol to give an efficient implementation of a distributed data structure for range searches on ordered data.

## **Hybrid Infrastructure System for Executing Service Workflows**

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Cloud computing systems provide on demand access to computational resources for dedicated use. Grid computing allows users to share heterogeneous resources from multiple administrative domains applied to common tasks. In this paper, the system discusses the characteristics and requirements of a hybrid infrastructure composed of both grid and cloud technologies. The infrastructure is used to manage the execution of service workflows in system through dynamic service composition. The dynamic service composition is achieved by the autonomic computing characteristics of the cloud computing technologies. The infrastructure can be expanded by acquiring computational resources on demand from the cloud during the workflow execution and it manages these resources and the workflow execution without user interference. Optimized Scheduling Algorithm was used. The hybrid infrastructure enables the execution of service workflows of grid jobs using cloud technology.

## **Video Watermarking Based on DWT-SVD Techniques**

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Video watermarking is well known as the process of embedding copyright information in video bit streams. It had been proposed in recent years to solve the problem of illegal manipulation and distribution of digital video. In this study, an effective, robust and imperceptible video watermarking algorithm was proposed. This algorithm was based on a cascade of two powerful mathematical transforms; Discrete Wavelets Transform (DWT) and Singular Value Decomposition (SVD). Two different transform domain techniques showed high level of complementary and different levels of robustness against the same attack will be achieved through their combination.

## **Analysis of Modern Steganographic Techniques**

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Steganography is the science that involves communicating the secret data in an appropriate multimedia carrier e.g. image, audio and video files. In this paper we have made an analysis of modern steganographic algorithms that are edge adaptive i.e. which can embed most of the secret data in edge areas while leaving the smoother regions as they are. Based on certain design criteria's such as security against RS steganalysis, invisibility (visually and statistically), embedding scheme etc, the algorithms have been evaluated. Our analysis explores the strengths and weaknesses of the modern steganographic techniques which will enable us to design a better steganographic algorithm.

## **Comparative Analysis of IPv4 and IPv6**

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The popularity of internet today and its complex junction of wires, connections, delivery mechanisms and addresses could not have possibly reached the outer limits of the imaginations of the Internet's forefathers. Nor could they have imagined the associated commercial and social phenomena they were unleashing. The internet has essentially changed the way that both individuals and businesses operate and communicate, especially in the developed world. This enormous growth in internet use has not only led to increased demand for better, faster technology, but also has increased the demand for addresses from which to send and receive information. IP enables data to be sent from one computer to another in a network and is known as connectionless protocol because there is not continuous connection between the two communicating devices. Internet Protocol version 6 or IPv6 is an improved version of the current and most widely used protocol IPv4. In this paper we discuss some of the security issues related to IPv6 and also compare the performance of IPv4 and IPv6 versions.

## **An Ensemble Secure Group Communication for Efficient Group-Key Distribution**

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In secure group-oriented applications, key management schemes are employed to distribute and update keys such that unauthorized parties cannot access group communications. Key management, however, can disclose information about the dynamics of group membership, such as the group size and the number of joining and departing users. This is a threat to applications with confidential group membership information. This paper investigates techniques that can stealthily acquire group dynamic information from key management. It has been shown that the insiders and the outsiders can successfully obtain group membership information by exploiting key establishment and key updating procedures in many popular key management schemes. Particularly, three methods targeting tree-based centralized key management schemes. Further, a defense technique utilizing batch rekeying and a derive performance criteria that describe security level of the proposed scheme using mutual information have been formulated. The proposed defense scheme is evaluated based on the data from Mbone Multicast sessions. A brief analysis on the disclosure of group dynamic information in contributory key management schemes has also been provided.

## **A Comparative Survey for Mobile Ad hoc Network and Wireless Sensor Network Protocols**

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Ad hoc Networks and Wireless Sensor networks are two special categories of infrastructure less Wireless Networks, which are going to play key role for next generation wireless network having few commonalities and many characteristic differences. This paper surveys the issues related to routing mechanism & performance of Mobile Ad hoc Networks & Wireless Sensor Networks with various routing approaches & classification.

## **Tracing Illegal Redistributors through Similarity of Traffic Patterns**

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The tracing scheme using similarity of traffic pattern to trace the source of leaks when sensitive or proprietary data is made available to large set of parties. On the other hand we must implement digital rights management (DRM) to control content spreading and to avoid unintended content use. General tracing methods use either watermarking or cryptographic keys to protect the digitally protected content. In those methods, malicious users can interrupt tracing with illegal process at user side computers. To prevent all illegal process at user side, routers should analyze information embedded in to packets which is unrealistic. The proposed method is used to detect illegal content streaming by using only traffic patterns which are constructed from amount of traffic traversing routers.

## **Dynamic Routing to Improve the Security Level of Networking**

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Security has become one of the major issues for data communication over wired and wireless networks. Different from the past work on the designs of cryptography algorithms and system infrastructures, we will propose a dynamic routing algorithm that could randomize delivery paths for data transmission. The algorithm is easy to implement and compatible with popular routing protocols, such as the Routing Information Protocol in wired networks and Destination-Sequenced Distance Vector protocol in wireless networks, without introducing extra control messages.

## **Impact of Computer-Mediated Communication on Virtual Teams' Performance: An Empirical Study on Multi-national Organizations**

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In a project environment, project teams face multi-dimensional communication problems that can ultimately lead to project breakdown. Team Performance varies in Face-to-Face (FTF) environment versus groups working remotely in a computer-mediated communication (CMC) environment. A brief review of the Input\_Process\_Output model among "Virtual Teams: Effects of Technological Mediation on Team Performance (2003)", has been done to develop the research. This model theoretically analyzes the effects of technological mediation on team processes, such as, cohesiveness, status and authority relations, counter-normative behavior and communication. An empirical study described in this paper has been undertaken to test the "cohesiveness" of diverse project teams in a multi-national organization. This study uses both quantitative and qualitative techniques for data gathering and analysis. These techniques include interviews, questionnaires for data collection and graphical data representation for analyzing the collected data. Computer-mediated technology may impact team performance because of difference in cohesiveness among teams and this difference may be moderated by factors, such as, the type of communication environment, the type of task and the temporal context of the team. Based on the reviewed model, sets of hypotheses are devised and tested. This research, reports on a study that compared team cohesiveness among virtual teams using CMC and non-CMC communication mediums. The findings suggest that the CMC can help virtual teams increase team cohesiveness among their members, making CMC an effective medium for increasing productivity and team performance.

## **A Reconfigurable FPGA Based Embedded Vision Systems**

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With the advent of mobile embedded multimedia devices that are required to perform a range of multimedia tasks, especially image processing tasks, the need to design efficient and high performance image processing systems in a short time-to-market schedule needs to be addressed. Image Processing algorithms implemented in hardware have emerged as the most viable solution for improving the performance of image processing systems. A single-chip FPGA implementation of a vision core is an efficient way to design fast and compact embedded vision systems from the PCB design level. The scope of the project is to design a novel FPGA-based parallel architecture for embedded vision entirely with on-chip FPGA resources. Block-RAMs and IO interfaces are used for the design. As a result, the system is compact, fast and flexible. Architectures for several mid-level neighbourhood algorithms are designed using Xilinx Virtex-2 Pro (XC2VP30) FPGA. The algorithm uses a vision core which supports image processing on a low-resolution image. The simulation results are compared with existing FPGA implementations. The performance of the algorithms could be substantially improved by applying sufficient parallelism.

## Interpreting Learners' Behaviour by Monitoring Online Tests through Data Visualization

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This paper presents an approach and a system to let tutors monitor several important aspects related to online tests, such as learner behavior and test quality. The approach includes the logging of important data related to learner interaction with the system during the execution of online tests and exploits data visualization to highlight information useful to let tutors review and improve the whole assessment process. This paper has focused on the discovery of behavioral patterns of learners and conceptual relationships among test items. For this Characterization and summarization has been used. The Characterization and summarization is implemented efficiently using Attribute Oriented Induction algorithm which discovers patterns for accessing learners behavior. By analyzing the data visualization charts, we have detected several previously unknown test strategies used by the learners. Last, we have detected several correlations among questions, which gave us useful feedbacks on the test quality.

## Routing Information Updation Mechanism Based Survey on MANET Routing Protocols

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Mobile Ad-hoc Networks is set of mobile hosts connected by multi-hop wireless links without centralized infrastructure support. With the gain in popularity, the need for suitable Ad-hoc routing protocols will continue to grow. Efficient dynamic routing, minimize control traffic, such as periodic update messages is an important issues in such a network. Many researchers have conducted numerous simulations for comparing the performance of these protocols under varying conditions and constraints. In this paper we discuss the Routing protocols based on routing information update mechanism. We believe the survey on the Protocols can be a great source of information for researchers in ad-hoc networks.

## A Rough Set Theory Approach to Database Normalization

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Both 5NF and 6NF are higher level normalization process that eliminates redundancy of data storage and insert/update/delete anomalies in relational tables and brings the relation variables into irreducible components. The 5th normal form also known as project-join normal form tries to achieve lossless decomposition of relations resulting in original reconstruction of database table when decomposed relations are joined together again. The sixth normal form is vital for relations that are dependent on temporal dimension that is implicit in their features. The difference between 5NF and 6NF is that for 5NF non-trivial dependencies are satisfied as long as these dependencies are implied by candidate key(s) , but, for 6NF no non-trivial dependencies are not at all allowed to be satisfied. The Domain-Key normal form stands as generalization for third, Boyce-codd, fourth and fifth normal forms wherein only the domain and keys constrains are involved. The rough set theory an elegant simpler tool to analyse the information system helps to achieve these normal forms by its mathematical model. The statistical evaluation of dependency measure from rough set forms the key concept to achieve these normal forms. Part 1 we dealt upto 4th Normal form including Boyce-Codd Normal form. In this Part of the paper, 5NF, 6NF and Domain-Key Normal form are taken up for discussion.

## Spray Transmission in Mobile Network

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Intermittently connected mobile networks are wireless networks where most of the time there does not exist a complete path from the source to the destination. There are many real networks that follow this model, for example, wildlife tracking sensor networks, military networks, vehicular ad hoc networks (VANETs), etc. In this context, conventional routing schemes would fail, because they try to establish complete end to-end paths, before any data is sent. To deal with such networks researchers have suggested to use flooding-based routing schemes. While flooding-based schemes have a high probability of delivery, they waste a lot of energy and suffer from severe contention which can significantly degrade their performance. With this in mind, we look into a number of "single-copy" routing schemes that use only one copy per message, and hence significantly reduce the resource requirements of flooding-based algorithms. We perform a detailed exploration of the single-copy routing space in order to identify efficient single-copy solutions that (i) can be employed when low resource usage is critical and (ii) can help improve the design of general routing schemes that use multiple copies. We also propose a theoretical framework that we use to analyze the performance of all single-copy schemes presented, and to derive upper and lower bounds on the delay of any scheme.

## **A Novel Edge Based Image Steganography with Enhanced Visual and Statistical Security**

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Steganography is the science that involves communicating the secret data in an appropriate multimedia carrier e.g. image, audio and video files. Edge Based Steganography is in which only the sharper edge regions are used for hiding the message while keeping the other smoother regions as they are. It is more difficult to observe changes at the sharper edges than those in smoother regions. In this paper we have proposed a novel architecture using Enhanced Least Significant Bit algorithm which can reduce the rate of pixel modification thereby increasing the security both visually and statistically.

## **Fast IP Network Recovery from Failures using Multiple Routing Configuration**

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The ability to recover from failures has always been a central design goal in the Internet. As the Internet takes an increasingly central role in our communications infrastructure, the slow convergence of routing protocols after a network failure becomes a growing problem. To assure quick recovery from link and node failures in IP networks, the new recovery scheme presented is called Multiple Routing Configurations (MRC). Our proposed scheme guarantees recovery in all single failure scenarios, using a single mechanism to handle both link and node failures, and without knowing the root cause of the failure. MRC is strictly connectionless, and assumes only destination based hop-by-hop forwarding. MRC is based on keeping additional routing information in the routers, and allows packet forwarding to continue on an alternative output link immediately after the detection of a failure. It can be implemented with only minor changes to existing solutions.

## Concurrent Operations for R+ Trees and Spatial Databases

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The R-tree family supports fast access to multidimensional data which has its use in a wide range of applications. Minimum bounded rectangle in the R-tree may increase the degree of overlap leading to performance degradation. R+-tree do not allow overlapping of minimum bounded rectangles at the same tree level and it exhibits outstanding search performance. Concurrency control mechanisms has been proposed to support the efficient concurrent access. R+-tree is not suitable for use with current concurrency control methods because a single object in the R+-tree may be indexed in different leaf nodes. A concurrency control protocol , granular locking for clipping indexing is designed for R+-tree and its variants to support deadlock free concurrent operations. The proposed multidimensional access method, ZR+-tree, utilizes object clipping, optimized insertion, and reinsert approaches to refine the indexing structure and remove limitations in constructing and updating R+-trees. Concurrency control for spatial access methods provides serializable operations in multi-user spatial databases. Here the solutions for efficient concurrent access frameworks on both types of spatial indexing structures are provided, as well as for continuous query processing on moving objects, for multiple-user environments. The efficient performance of proposed concurrency control protocol is validated by means of experimental tests.

## Cloud and Various Software Giants

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Cloud computing is changing the way we provision hardware and software for on-demand capacity fulfillment and changing the way we develop web applications and make business decisions. This paper discusses the evolution process of cloud computing, various services it provides and the current technologies adopted in various enterprises. The main focus will be on the cloud platform and environment that is been provided by the major vendors.

## Rainfall Formation has been Analysed to Predict Artificial Neural Network

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The Climate of the Rainfall depends on rainfall formation of a particular area. The three types of rainfall are Conventional rainfall, Orographic rainfall, and Cyclonic rainfall. The year may be divided into four Rainfall seasons, namely Dry weather, Hot-weather, South-West monsoon, North-West monsoon. The rainfall formation in India has been separated into States and Districts( like Tamilnadu and Tiruchirappalli). Accordingly the datas has been collected and developed in Artificial Neural Network to predict the rainfall.

## HA/Dr and Fire Drill Across Hypervisor Technology

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This paper discusses an approach for creating a good disaster recovery plan for a business Enterprise for recover the data after physical disasters. We know that the Disasters are inevitable but mostly unpredictable, and they vary in type and magnitude. The best strategy is to have some kind of disaster recovery plan in place, to return to normal after the disaster has struck. For an enterprise, a disaster means abrupt disruption of all or part of its business operations and destroys maximum data from the computer, which may directly result in revenue loss. To minimize disaster losses and recover the lost data, it is very important to have a good disaster recovery plan for every business subsystem and operation within an enterprise. Most information technology-related disasters are actually logical disasters, such as data corruption, viruses, and human error, as opposed to physical disasters like fire, earthquakes, hurricanes, etc. Logical disasters occur all the time and pose a bigger threat to businesses. However, because they're less visible to the general public, logical disasters tend to be taken less seriously apart from the physical disaster. This paper is present the HA/DR (High Availability/Disaster Recovery) solution for physical disaster and provided mechanism for replicate data after disaster .So in this paper we are allow HA/DR for Virtual Machine (VM) using VMware and Hypervisor Technology for providing the fast ,low cost ,reliable solution for IT Data after physical Disaster.

## Facial Recognition using the Theory of Biometrics

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While humans have had the innate ability to recognize and distinguish different faces for millions of years, computers are just now catching up. In this paper, we'll learn how computers are turning your face into computer code so it can be compared to thousands, if not millions, of other faces. We'll also look at how facial recognition software is being used in elections, criminal investigations and to secure your personal computer. Facial recognition software falls into a larger group of technologies known as biometrics. Biometrics uses biological information to verify identity. The basic idea behind biometrics is that our bodies contain unique properties that can be used to distinguish us from others. Facial recognition methods may vary, but they generally involve a series of steps that serve to capture, analyze and compare your face to a database of stored images. A Software company called Visonics developed Facial Recognition software called Faceit. The heart of this facial recognition system is the Local Feature Analysis (LFA) algorithm. This is the mathematical technique the system uses to encode faces. The system maps the face and creates a faceprint, a unique numerical code for that face. Once the system has stored a faceprint, it can compare it to the thousands or millions of faceprints stored in a database. Potential applications even include ATM and

check-cashing security, Security Law Enforcement & Security Surveillance . This biometrics technology could also be used to secure your computer files, by mounting a webcam to your computer and to get into your computer. By implementing this technology and the normal password security you are getting double security to your valuable data.

### **Algorithms for Hierarchical Mining using Association Rules**

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The large increase of transaction databases in the organizations. It is difficult to retrieve the data from databases. The application of the association rule has drawn huge response in recent years. In this paper we discuss the single pass algorithm for mining association rules for a hierarchical classification along with two optimizations hierarchy aware counting and transaction reduction which is used to increase efficiency of processing. In future, we bring out the effectiveness of the algorithms using association rule mining and to focus further work to explore this concept so as to categorize it in statistical, temporal or other terms, which may even be user-defined.

### **Efficient FPGA Implementation of Floating Point Reciprocator**

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In this paper we have presented an efficient FPGA implementation of a reciprocator for both IEEE single-precision and double-precision floating point numbers. The method is based on the use of look-up tables and partial block multipliers. Compared with previously reported work, the modules occupy less area with a higher performance and less latency. The designs trade off either 1 unit in last-place (ulp) or 2 ulp of accuracy (for double or single precision respectively), without rounding, to obtain a better implementation. Rounding can also be added to the design to restore some accuracy at a slight cost in area.

## **Intelligent Driver Assist and Fuel Consumption System for Road Transport using Ubiquitous RFID**

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It is aimed at developing a system that is capable of providing continuous monitoring of desirable vehicle close to the querying user. This identification of the vehicle is done with the help of RFID tag fixed at the vehicle. Using the Shortest Path we then guide the corresponding vehicle to move to the query destination point. Vehicular traffic control at road crossings has always been a matter of concern for administrations in many modern cities around the world. Several attempts have been made to design efficient automated systems to solve this problem. Most of the present day systems use predetermined timing circuits to operate traffic signals, which are not very efficient because they do not operate according to the current volume of traffic at the crossing. It is often seen in today's automated traffic control systems that vehicles have to wait at a road crossing even though there is little or no traffic in the other direction. So we take the existing system and update the system to make it useful for our application in order to reduce the traffic by deploying the detectors at signal points. And finally integrating an acceleration control and vehicle idling scheme for vehicles which results in a fuel consumption system, avoiding wastage of fuel as when it approaches and waits in the traffic signal over a period of time.

## **Data Mining Based Decision Support System for Weapon Detection using Image Mining**

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In the current national security environment, there is little question that terrorism is among the gravest of threats. Massive resources throughout the Government and Private Sectors have been allocated and reallocated to the task of preventing terrorism. These efforts, however, often lack a conceptual-let alone empirically-based-foundation for understanding terrorists and their acts of violence. This void creates a serious challenge at many levels, from policy-level decisions about how a State should respond to terrorism, to individual-level decisions about whether a given person of interest, who espouses extremist ideas, truly poses a serious threat to Country personnel and interests. The main goal of the paper is to detect the concealed weapon based on the captured IR images using image fusion and image mining techniques.

## High Performance QOSTBC using Quasi Zero Forcing Decoding Algorithm

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This papers presents a number of Quasi- Orthogonal Space-Time Block Codes (QOSTBC) have been proposed for using in multiple transmit antennas systems. We show that with the aid of multiplying the entries of QOSTBC code words by the appropriate phase factors which depend on the channel information, the proposed scheme can improve its transmit diversity with one bit feedback. The performances of the proposed scenario extended from Jafarkhani's QOSTBC as well as its optimal constellation rotated scheme are analyzed. By using zero forcing decoding algorithm, simulation results show that zero-forcing algorithm has better bit error rate performance as compared to the existing typical codes and can reduce the computational complexity at receiver.

## Query Processing using K-Anonymity in Road Networks

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The increasing trend of embedding positioning capabilities (e.g., GPS) in mobile devices facilitates the widespread use of Location Based Services (LBS), which provides mobile users with on-demand information. But the queries which has been posed by the user itself make may disclose his location and identity. When user location information is compromised, an attacker can stalk or blackmail the user. Recently, concept of anonymizer is used for anonymous surfing but, the system poses a security threat if the anonymizer is compromised. To avoid such bottleneck of anonymizer, the proposed approach uses the concept of K-anonymity and also encrypts owner data so that they are hidden from location server, while it can still process anonymous queries in an efficient way. Extensive experimental studies suggest that proposed approach is applicable to real life scenarios with large populations of mobile users.

## Denial of Sleep Attack in Wireless Sensor Networks

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Nowadays, wireless sensor network platforms are becoming more powerful having wide spread use. Like other networks wireless sensor networks are vulnerable to malicious attack. This paper explores a defend mechanism for the sleep attacks in which a sensor nodes power supply is targeted, reducing the lifetime of the sensor node. This paper analyses, i) different classes of attacks in the MAC protocols i.e. sensor MAC, Berkeley MAC and Timeout MAC ii) the effectiveness and efficiency of the attacks are validated. iii) a frame work for defending the sleep attacks is also introduced.

## Enhancing Data Security using Crypt-Stego-Water in Image Files

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In this paper, a technique of secure data transmission through hiding of data in image file by replacing it's one of the LSB has been presented. The watermarked bit embedded into image sample increases the robustness against noise hence by combining cryptography and steganography we will increase the security of data.

## Cloud Computing and its Role in Enterprises

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Cloud computing promises to increase the velocity with which applications are deployed, increase innovation, and lower costs, all while increasing business agility. An inclusive view of cloud computing that allows it to support every facet, including the server, storage, network, and virtualization technology that drive cloud computing environments to the software that runs in virtual appliances that can be used to assemble applications in minimal time. This paper discusses how cloud computing transforms the way of design, build, and deliver applications, and the architectural considerations that enterprises must make when adopting and using cloud computing technology.

## A Comparative Study on Wavelet based Image Compression Techniques and its Applications

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The objective of this paper is to discuss the different type of Wavelet based image compression techniques. The techniques involved in this process are SPIHT, EZW, SPECK, WDR, ASWDR, SFQ, CREW, EPWIC, EBCOT and SR. This paper focuses the important features of wavelet based image compression techniques and its applications.

## Artificial Neural Network with Misuse Detection

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Misuse detection is the process of attempting to identify instances of network attacks by comparing current activity against the expected actions of an intruder. Most current approaches to misuse detection involve the use of rule-based expert systems to identify indications of known attacks. However, these techniques are less successful in identifying attacks which vary from expected patterns. , detecting new attacks is not an easy job for intrusion detection system (IDS), an intelligent method like artificial neural networks (ANN) has been a successful method to solve this problem. In this paper, we create a misuse IDS system to show that unsupervised growing hierarchical self-organizing maps (GHSOM) and recurrent Jordan-Elman neural networks perform surprisingly well when aggressively trained and tested on a corpus of attacks to detect and classify known and new attacks in network traffic.

## A Novel Approach for Preventing SQL Query Attacks

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A combinatorial approach for protecting Web applications against SQL injection is discussed in this paper, which is a novel idea of incorporating the uniqueness of Signature based method and auditing method. The major issue of web application security is the SQL Injection, which can give the attackers unrestricted access to the database that underlie Web applications .Many software systems have evolved to include a Web-based component that makes them available to the public via the Internet and can expose them to a variety of Web-based attacks. One of these attacks is SQL injection, which can give attackers unrestricted access to the databases that underlie Web applications and has become increasingly frequent and serious. This paper presents a new highly automated approach for protecting Web applications against SQL injection that has both conceptual and practical advantages over most existing techniques. From a conceptual standpoint, the approach is based on the novel idea of positive tainting and on the concept of syntax-aware evaluation. From a practical standpoint, our technique is precise and efficient, has minimal deployment requirements, and incurs a negligible performance overhead in most cases. We have implemented our techniques in the Web Application SQL-injection Preventer (WASP) tool, which we used to perform an empirical evaluation on a wide range of Web applications that we subjected to a large and varied set of attacks and legitimate accesses. WASP was able to stop all of the otherwise successful

## Investigating Efficiency of Spatiotemporal Access Methods

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In spatio-temporal applications, moving objects detect their locations via location-aware devices and update their locations continuously to the server. With the ubiquity and massive numbers of moving objects, many spatio-temporal access methods are developed to process user queries efficiently. Spatiotemporal access methods are classified into four categories: (1) Indexing the past data, (2) Indexing the current data, (3) Indexing the future data, and (4) Indexing data at all points of time[1]. In this short survey we consider 4th category, in that survey mainly deals with the comparative analysis of BBx- index, PCFI+ index and RPPF-TREE.

## A Reconfigurable FPGA Based Embedded Vision Systems

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With the advent of mobile embedded multimedia devices that are required to perform a range of multimedia tasks, especially image processing tasks, the need to design efficient and high performance image processing systems in a short time-to-market schedule needs to be addressed. Image Processing algorithms implemented in hardware have emerged as the most viable solution for improving the performance of image processing systems. A single-chip FPGA implementation of a vision core is an efficient way to design fast and compact embedded vision systems from the PCB design level. The scope of the project is to design a novel FPGA-based parallel architecture for embedded vision entirely with on-chip FPGA resources. Block RAMs and IO interfaces are used for the design. As a result, the system is compact, fast and flexible. Architectures for several mid-level neighbourhood algorithms are designed using Xilinx Virtex-2 Pro (XC2VP30) FPGA. The algorithm uses a vision core which supports image processing on a low-resolution image. The simulation results are compared with existing FPGA implementations. The performance of the algorithms could be substantially improved by applying sufficient

## Optimized Energy Reduction by Partitioning and Allocation of Scratch Pad Memory

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A method to reduce energy and improve performance in a processor based embedded system is described in this paper. Scratchpads are more energy efficient than caches but require software support for their utilization. A new software technique is presented which supports the use of an on-chip scratchpad dynamically to copy the program contents. These techniques are applicable to a real-time environment. The three methods for energy reduction are spatial, temporal, and hybrid methods, bring about effective usage of the scratch-pad memory space, and achieved energy reduction in the instruction memory subsystems. The formulation of the method are determined by 1) The partitioning and allocation technique of SPM in level-1 cache for each tasks 2) The performance evolution is observed by the object memory management in arm 9 processor using RTOS (VXWORKS6.2) with In-circuit Debugger.

## Information Hiding using Audio Steganography

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Steganography is the practice of encoding secret information in indiscernible way. Audio Steganography is a technique used to transmit hidden information by modifying an audio signal in an imperceptible manner. It is mainly required for increasing security in transferring and archiving of audio files. Steganography complements rather than replaces encryption by adding another layer of security- it is much more difficult to decrypt a message if it is not known that there is a message. The basic idea of the paper is to present methods that hides information (audio, image and text) in cover audio using Least Significant Bit (LSB) coding method along with encryption so as to increase the security. Two novel methods have been proposed in this paper, one is considering parity of the digitized samples of cover audio and the other is considering the XOR operation. A novel method which is an extension to the XOR method that uses multiple LSB.s for data embedding is also proposed. Experimental results are presented in this paper to demonstrate the effectiveness of the proposed methods. In addition, subjective listening tests are performed and the perceptual quality of the stego audio signal is found to be high. The LSB bits for hiding are selected with a new adaptive algorithm. This algorithm does not hide information in silent parts, so there is no need for silent detection algorithms. This method has zero error in hiding/unhiding process, while normal

wavelet domain LSB has about 0.2 % error in equal hiding capacity. This method is a high capacity steganography method which can hide information up to 20% of the input speech. The Signal-to-Noise Ratio (SNR) and listening tests show that the stegano audio is imperceptible from original audio.

### **A Reconfigurable and High Precision VLSI Architecture for Fast Fourier Transform**

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A fast Fourier transform (FFT) is an efficient algorithm to compute the discrete Fourier transform (DFT) and its inverse. In general, the fast Fourier transform (FFT) and inverse FFT (IFFT) operations are used as the modulation/demodulation kernel in the OFDM systems. Many algorithms are available for the computation of FFT. In this paper, A reconfigurable and high precision FFT architecture using the mixed form of radix-2, radix-4 are designed using VHDL. A mixed radix algorithm is a combination of different radix-r algorithms. That is, different stages in the FFT computation have different radices. For instance, a 64-point long FFT can be computed in two stages using one stage with radix-8 PEs, followed by a stage of radix-2 PEs.

### **Cloud Computing and IaaS: An analysis**

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The word of the magic "Cloud gives rain", which emphasis the computing era to Cloud computing to yield advantages as SaaS, PaaS, IaaS and also for Storage. Here we studied the cloud computing and companies that applies IaaS and the recent work that prevails in those organizations.

### **A Cloud Application for Checking the Prime Numbers on Grid with Zero Deployment Technology**

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This paper gives a brief introduction of computer applications research in the field of Cloud and Grid Computing using java. The authors have implemented a cloud application for checking a given number whether it is a prime number or not on the grid with zero deployment technology. The experimental results are obtained with the help of Gridgain Application Platform.

## Attenuation of Control Channel Jamming

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The availability of service in wireless networks mainly depends on the ability for network users to establish and maintain communication channels using control messages from base stations and other users. An adversary with knowledge of the underlying communication protocol can mount an efficient denial of service attack by jamming the communication channels used to exchange control messages. The spread spectrum techniques can deter an external adversary from such control channel jamming attacks. However, malicious colluding insiders or an adversary who captures system users is not controlled by spread spectrum because they know the required spreading sequences. For the case of internal adversaries, a new approach has been proposed for control channel access schemes using the random assignment of cryptographic keys to hide the location of control channels. We propose a technique for the identification and revocation of compromised users by the service provider or a trusted authority that need not be constantly online. An algorithm called GUI has been proposed for the identification of compromised users in the system based on the set of control channels that are jammed. The estimation error using the GUI algorithm is based on false alarm and miss rates in the identification problem.

## Extracting Frequent Nodes from a Typical Interconnected Graph

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The algorithms for mining the graph datasets which discovers the patterns corresponding to sub graphs operating efficiently on multilevel graphs that are sparse, frequently occurring, contain well-labelled vertices and edges, have vertices with low and bounded degrees, and contain large number of relatively connected components. These algorithms become highly unscalable, however some connected graphs that cannot share these characteristics. To overcome the limitations of existing complete or heuristic frequent sub graph discovery algorithms, we propose a new algorithm called EFS (Extraction of Frequent Subgraphs) algorithm. EFS is designed to operate on a large multilevel interconnected graph and to find patterns corresponding to connected sub graphs that have large number of distinct vertices and edges. This algorithm can scale very large graphs and can find non-trivial patterns.

## **Artificial Intelligence: Origin and Development of Robotics**

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In this world of science and technology robotics is one of the boom to the world. Recently, there has been increasing interest in the emerging field of robotics. Today's robots are mechanical arms controlled by computers that are programmed to perform a range of handling activities. They are establishing themselves in manufacturing automation systems to produce a range of goods with great precision. The emerging era of robots calls for different types of skills. Entering non-industrial areas, the first fledgling robots for domestic use are coming off the production lines. Robots are being used in hazardous places, such as outer space or under the sea. Technical advances are gradually endowing robots with properties that actually increase their similarity to humans. This paper gives a short introduction to the basics of robotics in the context of artificial intelligence. It describes the very basics of robotics like sensors and effectors, gives an overview on robotic history, and introduces some basic problems encountered in modern robotics. It describes possible solutions to those problems without going deeply into theory. The problems introduced are perception, basic pose description, transition and sensor models, localization as a special case of perception (Monte Carlo Localization, Extended Kalman Filter), representation of environment (workspace and configuration space), movement of robots, and some real-life examples. an overview on robotic history, and introduces some basic problems

## **Comparison on Reactive and Proactive Mobile Ad hoc Routing Protocols in Multicast Environment**

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Multicasting is the transmission of datagram to a group of hosts identified by a single destination address and hence is intended for group-oriented computing. In MANET (Mobile Ad hoc Network), multicast can efficiently support a variety of applications that are characterized by close collaborative efforts. We have conducted survey of simulation results of various Manet routing algorithms and analyzed them for multicasting. The Routing algorithms considered are AODV, DSR, DSDV and TORA. The performance measurements are based on the various parameters such as packet delivery fraction, average end to end delay, routing overhead and throughput. Future work in this area includes development of efficient routing protocols so as to improve the performance of the parameter in which the particular routing protocol is lagging.

## **Knowledge Discovery of Electronic Health Record (EHR)**

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Health sector is having huge data and very important information about the patient and his/her health. Knowledge management (KM) is becoming an established discipline with many applications and techniques, its adoption in health care has been challenging. Though, the health care sector relies heavily on knowledge and evidence based medicine is expected to be implemented in daily health care activities. Computerized-Health record and connection among the stake holders is need of the hour and will be advantageous to the citizen and the government. It is obvious that health care can profit from many advantages that KM can provide. Nevertheless, several challenges are ahead, some are proper to KM and other particular to the health care field This research will focuses on the Electronic Health Record (EHR) System and gives the general structure to implement the centralized E-Health records through health information network system and knowledge Discovery from those records.

## **Design of IEEE 754 Compliant Floating Point Unit**

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IEEE 754 compliant Floating point unit using FPGA that consists of arithmetic modules has to be designed and developed. The Floating Point Unit acts as a co-processor, that comprises of the arithmetic modules, Multiplier, Adder, subtractor and divider. The floating point data formats, operations, and special values are compared with the IEEE 754 standard with double precision format, which gives potential gains in performance. The core architecture for each module has to be selected by careful analysis based on the speed, complexity and power. This project involves selection of suitable architecture for each module, developing FPGA program using VHDL codes and identification of the FPGA device. The Programming should be done in such a way that each module operates the mathematical data in an accurate manner. The developed FPGA program will be verified by simulation and the test cases will be developed and tested using software tools.

## Handwritten Character Recognition using Artificial Neural Networks

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Handwriting recognition is a difficult problem because of variations in handwritten characters as well as overlaps and interconnections between neighboring characters. One approach that has shown great promise is the use of Artificial Neural Networks. In this approach, an artificial neural network is trained to identify similarities and patterns among different handwriting samples. A preprocessor extracts each character from a scanned-in document image and divides it into segments. A Neural Network classifier finds the likelihood's of each possible character class given the segments and combination of segments. This likelihood's along with statistics compared from a lexicon are used as input to a dynamic programming algorithm, which recognizes the entire character. Handwritten character recognition is the problem of interpreting a character image by assigning to it a particular character. The sub problems range from recognizing block-printed and disconnected characters to identifying handwritten characters. Handwritten character recognition can be done on-line or off-line. When the recognition is done on-line, a user typically writes a character onto a computer interface. When it is done off-line, only the handwritten character image is available. Hence, off-line handwriting recognition is more difficult.

## Real Time Multi-Item Requests Scheduling in On-Demand Broadcast Environment

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Broadcasting is an efficient way to transmit data in an asymmetric communication system. On-demand broadcast is an effective wireless data dissemination technique. Most of the recent studies on on-line data scheduling in on-demand broadcast consider a restrictive case of single-item request. This model may not be practical for some emerging applications, where is an increasing need for systems to support efficient processing of real-time multi-item request. Little work however has been done.

In this project the behaviours of existing single-item request based algorithm in multi-item request environment is studied. It is observed that all algorithms deteriorate in multi-item request environment. Based on the findings, two new on-line scheduling algorithms are proposed to handle time critical multi-item request. The performance results will show that the proposed scheduling algorithms considerably outperforms existing algorithm.

## Safe and Secure FPGA Based Remote Control Application for Intelligent Home

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In this paper, secure FPGA based remote control system for intelligent houses has been presented. With this implemented system, it is possible to safely control electricity operated domestic devices by the help of mobile phones from any places all over the world. Remote Sensing today needs to make use of the latest available technological components. here, we present the design and hardware implementation of the main controller for a remote sensing system that can be communicated through the GSM (Global System for Mobile) network. This system offers a complete, low cost, powerful and user friendly way of 24 hours realtime monitoring and remote sensing system. The design has been described using VHDL (VHSIC Language) and implemented in hardware using FPGA (Field Programmable Gate Array).

## Using Cyclomatic Complexity for Effective Testing

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Many metrics have been proposed to measure the complexity or cohesion of object-oriented software. However, the cyclomatic complexity of a piece of software is more difficult to capture than the available metrics imply. Studies have shown that existing metrics consistently fail to capture complexity or cohesion well. This study shows that there is an overlap between some of the complexity and cohesion metrics and points to a more basic relationship between complexity and cohesion: that a lack of cohesion may be associated with high complexity. Using basis path testing as a unit of "white box" testing, every independent paths within a module were exercised at least once and all loops at their boundaries and within executed. Applying a direct approach, I set a criterion that if the cyclomatic complexity of a module is  $V$ , then at least  $V$  distinct paths must be executed during testing. In all, reduction in complexity in software is one of the properties that will ultimately lead to creating a dependable system.

## Routing Protocols for Ad hoc Wireless LANs

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The idea of forming an ad hoc on-the-fly network of mobile devices opens up an exciting new world of possibilities. Because ad-hoc networks do not need any pre-existing infrastructure, they can solve many interesting problems of spontaneous link establishment, i.e. communication on the fly. In this case, ad-hoc networks have a clear advantage over the classic, wire-bound connections. An ad-hoc mobile network is a collection of mobile nodes that are dynamically and arbitrarily located in such a manner that the interconnections between nodes are capable of changing on a continual basis. In order to facilitate communication within the network, a routing protocol is used to discover routes between nodes. The primary goal of such an ad-hoc network routing protocol is correct and efficient route establishment between a pair of nodes so that messages may be delivered in a timely manner. Route construction should be done with a minimum of overhead and bandwidth consumption. This report examines firstly the mathematical dynamism of such ad hoc networks, which spawns the need for a different approach towards routing. Then it goes on to explain various routing protocols for ad-hoc networks and evaluates these protocols based on a given set of parameters. The paper provides an overview of various protocols by presenting their characteristics and functionality, and then provides a comparison and discussion of their respective merits and drawbacks.

## C Spark: The Programming Solution for C Mongers

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C Spark is a programming language and is used to create windows-based applications. This is fully based on the syntax of C and C++ programming languages. It supports both Procedure and Object Oriented Programming features and also structured like C and C++. The different modules of C Spark are:

- The IDE
- Compiler
- Executer / Kernel

### The Integrated Development Environment (IDE)

The IDE for this language is written through the path of VGA driver used in C language. It provides GUI, through which it gives many easy ways to open and create a project. The basic features included in the IDE are the following: Editing Window, Menu Bar, Tool Bar, Tool Box, Project Explorer, Form Objects and Properties Window.

### The Compiler

The basic use of a compiler is to convert a source code to an executable code. It has two vital functions:

- Pre-compilation
- Compilation

Pre-compilation is a stage prior to the compilation. Its main function is to remove the case sensitive characters and the redundant spaces. It is also used to find the functional resources available.

The compilation process is used in producing the text based scripts. This also secures

- Syntax Checking
- Scope of the Variable

The output of this is converted to a script and is split into two parts namely:

- IDE generated code
- System script

### **Executer/Kernel**

The Kernel or the Executer is defined through which multiple threads can be accessed. This helps to access the system script. System Script is fully C Spark Based Script (CBS) and so it has the ability to function well in Linux and like platforms. Executer also helps in creating SWAP file. The major parts of C Spark files are: .CRP – Project File, .WIN – Resource File, .MOD – Module File, .LIB – Libraries, .X – Compiled Script executed File, .SAP – SWAP File, .TMP – Temp Files, .PIX – CR based Image Files, .FF – Flat Files.

## **Comparative Study and Reusability Metrics Calculation with Reliability Estimation of a Source Code Navigation Tool**

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Annotations play an important role both in software development and software maintenance activities. The semantically rich annotations will be supporting the software developers to a very significant level. The current source code annotations which are provided by modern development environment such as Eclipse are having difficulty in managing the annotations. Thus, a novel approach is emerged to improve efficiency of development tools and to reduce development time and cost. The main objective of this paper is to provide insights in defining semantically rich annotations to source code using Tags for Software Engineering Activities (TagSEA) tool and to improve navigation and management of annotations while estimating the reliability of the tool. The comparison with existing annotation tool support is provided and also the tag reusability metrics is considered. But reliability is more focused and it is being one of the illusive targets to achieve in the software development for the successful software projects. It is one of the most important parameter or attribute of software to be achieved for the software quality. There are different techniques and models used for estimating the reliability of the software. We are using an architecture-based approach also for estimating the reliability.

## **FPGA Implementation of High Speed Infrared Image Enhancement**

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This paper deals with Field Programmable Gate Array (FPGA) based hardware Implementation of Infrared Image (IRI) enhancement of thermo graphic images. The image enhancement capabilities and properties of the transform are analyzed. The transform is capable to perform both a nonlinear and a shape preserving stretch of the image histogram. FPGA Implemented results compared with Matlab experiments and comparisons to histogram equalization are conducted.

## **Reconfigurable Data Path for a High Performance Unified Field Cryptographic Processor**

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The growth in data communications and internet services has made cryptography an interesting research topic. In this paper, we propose a reconfigurable datapath which can perform either prime field  $GF(p)$  or binary extension field  $GF(2^m)$  operations. Users are capable of programming cryptographic algorithms using these field arithmetic units. The developed reconfigurable datapath can provide cryptography algorithm flexibility, high performance and high hardware utilisation for a cryptographic processor.

## **Analysis of Liver Disorder using Data Mining Algorithm**

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There are many disorders of the liver that require clinical care by a physician or other healthcare professional. The study of liver development has significantly contributed to developmental concepts about morphogenesis and differentiation of other organs. Knowledge of the mechanisms that regulate hepatic epithelial cell differentiation has been essential in creating efficient cell culture protocols for programmed differentiation of stem cells to hepatocytes as well as developing cell transplantation therapies. Such knowledge also provides a basis for the understanding of human congenital diseases. Significantly, much of understanding of organ development has arisen from analyses of patients with liver deficiencies. In this paper the data classification is based on liver disorder the training data set is developed by collecting data from UCI repository consists of 345 instances with 7 different attributes. The instances in the dataset are pertaining to the two categories of blood tests which are thought to be sensitive to liver disorders that might arise from excessive alcohol consumption, labeled as Low (L), and (H) to represent the profit as 0 and 1 which result in accuracy and time taken to build the algorithm. WEAK tool is used to classify the data and the data is evaluated using 10-fold cross validation and the results are compared.

## **Efficient Resource Management Mechanism with Fault Tolerant Model for Computational Grids**

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Grid computing provides a framework and deployment environment that enables resource sharing, accessing, aggregation and management. It allows resource and coordinated use of various resources in dynamic, distributed virtual organization. The grid scheduling is responsible for resource discovery, resource selection and job assignment over a decentralized heterogeneous system. In the existing system, primary-backup approach is used for fault tolerance in a single environment. In this approach, each task has a primary copy and backup copy on two different processors. For dependent tasks, precedence constraint among tasks must be considered when scheduling backup copies and overloading backups. Then, two algorithms have been developed to schedule backups of dependent and independent tasks. The proposed work is to manage the resource failures in grid job scheduling. In this method, data source and resource are integrated from different geographical environment. Fault-tolerant scheduling with primary backup approach is used to handle job failures in grid environment. Impact of communication protocols is considered. Communication protocols such as Transmission Control Protocol (TCP), User Datagram Protocol (UDP) which are used to distribute the message of each task to grid resources.

## Usage of Automatic Data and Visualization in Knowledge Discovery

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The aim of this work is to survey and reflect on the various ways to integrate visualization and data mining techniques toward a mixed-initiative knowledge discovery taking the best human and machine capabilities. While information visualization targets the visual representation of large-scale data collections to help people to understand and analyze information, data mining, on the other hand, aims at extracting hidden patterns and model from data automatically or semi-automatically. In its most extreme representation, information visualization can be seen as a human-centered approach to knowledge discovery, whereas data mining is generally purely machine-driven, using computational tools to extract automatically model or patterns out of data, to devise information and ultimately knowledge. Interactive machine learning is an area of research where the integration of human and machine capabilities is advocated.

## Maintaining a Local Database on Client Side for Mobile Commerce System

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Mobile commerce uses mobile phones, PDA and other wireless devices to conduct e-Commerce activities, Comparing the traditional e-commerce, M-commerce becoming a dominant force in business and society. With the development of 4G networks, application of these emerging technologies will translate into better products or services. The Existing system in mobile commerce is it provides with the following services in chief: banking, trading, ticketing, shopping, entertainment, wireless medical treatment, mobile application services and so on. The usages of the applications were mainly based upon node database, which is present in the server side. Thus, we use Smart Client Technology on .NET Platform to develop a Local database in the client side. And synchronize the client database with that of the node database to retrieve the required applications. Thus we are accessing the information without the actual involvement of the Server. This helps the user to collect the information faster and the time is saved.

## Efficient Routing Based on Load Balancing in Wireless Mesh Networks

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In this paper proposes a clustered routing scheme for wireless mesh networks (WMNs). In a WMN, the traffic load tends to be unevenly distributed over the network. In this situation, the clustered routing scheme can balance the load, and consequently, enhance the overall network capacity. We design a routing scheme which maximizes the utility. In this system WMN is divided into multiple clusters for load control. A cluster head estimates traffic load in its cluster. In this paper we propose an algorithm to network these mesh nodes in to well define clusters with less-energy-constrained gateway nodes acting as cluster heads, and balance load among these gateways. Simulation results show how our approach can balance the load and improve the lifetime of the system.

## On Availability of Intermediate Data in Cloud Computations

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This paper takes a renewed look at the problem of managing intermediate data that is generated during dataflow computations (e.g., MapReduce, Pig, Dryad, etc.) within clouds. We discuss salient features of this intermediate data and outline requirements for a solution. Our experiments show that existing local write remote read solutions, traditional distributed file systems (e.g., HDFS), and support from transport protocols (e.g., TCP-Nice) cannot guarantee both data availability and minimal interference, which are our key requirements. We present design ideas for a new intermediate data storage system.

## The Preamble Synchronization for Wimax OFDM Systems

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The preamble synchronization is an important process in the implementations of the OFDM systems. In this paper studies the frame (timing and frequency) synchronization of OFDM based wireless systems and proposes a new method for IEEE 802.16 (Fixed Wimax & Mobility Wimax) to improve its performance. The preamble, which is used in this method, consists of two identical halves, and our method uses the correlation between these two parts in a new efficient form. The paper justifies the chosen techniques and presents the results obtained for a QPSK signal constellation in a Rayleigh channel with additive white Gaussian noise (AWGN). Results show that the proposed approach maintains the Bit Error Rate (BER) within 2% of the values obtained from an offset-system.

## Dynamic Cluster Broadcasting for Mobile Ad hoc Networks

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Optimal broadcasting in mobile ad hoc networks is crucial for providing control and routing information for multicast and point to point communication algorithms. This paper presents static and dynamic cluster broadcasting for Mobile Ad Hoc Networks. The static cluster (cluster based source-independent CDS) consists fixed cluster heads and gateways. The dynamic cluster (cluster based source-dependent CDS) consists fixed cluster heads and dynamically selected gateways and we make recommendations dynamic cluster based broadcasting technique is best to improve the packets throughput.

## Human Area Networking

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Much of Networking today is performed using the concept of wireless technology. Now we are furiously rising to a technique that will be more advantageous than the previous system. Networking that is performed using wired or wireless media requires high power capacities and usually meets up with traffic congestion, data loss and security problems. The new material that we have found to be sound enough to build the next generation of Networking is Red Tacton. This technology mainly enables communication between people and objects in close proximity. It enables ubiquitous services based on human-centered interactions and therefore more intimate and easier for people to use. It utilizes the surface of the human body as a safe, high speed network transmission path thus forming the concept of Human Area Networking. The embedding of Red Tacton in real time networks to perform complex networking tasks are dealt with in this paper which takes Red Tacton a step further.

## A Framework for Secured Source Routing in Autonomous Systems

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In today's Internet, inter-domain route control remains indescribable; nonetheless such control could improve the performance, reliability, and utility of the network for end users and ISPs alike. While researchers have proposed a number of source routing techniques to contest this limitation, there has thus far been no way for self-governing autonomous system to ensure that such traffic does not avoid local traffic policies, nor to accurately determine the correct party to charge for forwarding the traffic. We present Platypus, an authenticated source routing system built around the concept of network capabilities, which allow for accountable, optimal path selection by cryptographically attesting to policy compliance at each hop along a source route. Capabilities can be composed to construct routes through multiple autonomous systems and can be entrusted to third parties. Platypus caters to the needs of both end users and ISPs: users gain the ability to pool their resources and select routes other than the default, while ISPs maintain control over where, when, and whose packets pass through their networks. Our approach to reducing this complexity is to separate the issues of connectivity discovery and path selection. Removing policy constraints from route detection presents a chance for end users and edge networks: routes previously hidden by overly traditional policy filters can be revealed by autonomous system and traversed by packets.



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