Conference Proceeding

2015 International Conference on Advances in Computer Engineering & Applications

(ICACEA-12015)

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IMS Ghaziabad Group of Institutions

IMS Ghaziabad was founded in 1990 by a group of visionaries and intellectuals to impart quality education in a stimulating and innovative environment where students are empowered with knowledge and professional skills, with upholding the values of integrity, tolerance and mutual respect. Since its inception the group has promoted education in the areas of Management Sciences, Tourism, Information Technology, Bio-Science, Engg. Sciences and Journalism through its three educational campuses equipped with state of art infrastructure. IMS has attained a unique and a highly respectable place amongst the best professional education institutions in India.

IMSEC is one of the Premier Private Engineering Institutions of India. IMSEC is bestowed with "**Excellence in Overall Performance**" Award jointly by AICTE & UP Govt. It is also a recipient of 3rd Position for Excellent Academic Performance among all Engineering Colleges of National Capital Region (NCR). **IMSEC Ghaziabad** is NAAC Accredited for maintaining quality in Education & Infrastructure. The highly qualified and committed faculty, the state-of-the-art laboratories, Computer Centre and Learning Resource Centre, the wholesome pedagogic ambience, provide the student the most exciting and gainful opportunities for the acquisition of knowledge and technical expertise to groom and orient the young minds. **IMSEC Ghaziabad** is TCS Accredited for Placements & Project Activities. The faculty at IMS Engineering College has been recruited as per the quality policy ensuring that the faculty members have the background of reputed National Colleges/Universities.

IMS Ghaziabad has earned a reputation of academic excellence in providing practical and quality academic programmes in the field of Management Sciences, Tourism, Information Technology, Bio-Sciences and Journalism. *IMS Ghaziabad* offers full-time programmes, which are industry based, value–driven and rigorous. The professionally oriented programmes offered by IMS are designed to train the students to become well versed and excel in their respective fields. The two–year full time **Post Graduate Diploma in Management (PGDM) Programme** has been accredited the **MBA** – Equivalent Status by the 'Association of Indian Universities (AIU)' and AICTE.

The National Board of Accreditation (NBA) has also granted accreditation to the PGDM programme of our institute. Currently *IMS Ghaziabad* offers PGDM and M.C.A courses. IMS has been ranked **4th in Top B-Schools** of Excellence in All India as per latest CSR-GHRDC B-School Survey (Nov. 2011). IMS has been ranked amongst **TOP 10 B-Schools of Delhi NCR** by the latest Mail Today (The India Today Group) and Hindustan Times B-Schools surveys. *IMS Ghaziabad* has been ranked "**A1" by AIMA** (All India Management Association) as per the latest survey published in INDIAN MANAGEMENT Journal May 2011.

IMS Group Includes

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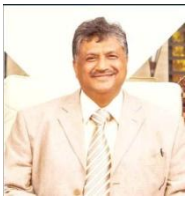

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Mission & Vision

Vision (Institute)

Our vision is to impart vibrant innovative and global education and to make IMS the world leader in terms of excellence of education, research and to serve the nation in the 21st century.

Vision (Department of Computer Science & Engineering)

To be recognized as one of the focused Engineering Departments imparting quality education among Private Engineering Institutes at State & National level.

Mission (Institute)

- To promote technical proficiency by adopting effective teaching learning processes.
- To provide environment & opportunity for students to bring out their inherent talents for their all round development.
- To pursue creative and new technologies in Computer Science and Engineering and across disciplines in order to serve the needs of industry, government, society, and the scientific community.
- To educate students to be successful, ethical, and effective problem-solvers and life-long learners who will contribute positively to the society.

Mission (Department of Computer Science & Engineering)

- To provide an encouraging and disciplined environment for effective & meaningful teaching learning.
- To emphasize on practical oriented learning & skill enhancement of the students through value addition programs. Enhance the overall employability skills of the students.
- To produce better results in university exams through rigorous academic monitoring & team efforts.
- Cultivating value system among students through proper counseling. Motivating students to give back to the society
- To encourage faculty and students for higher studies & research.

Message by Chief Patron

On behalf of IMS Society, I am delighted to welcome all the delegates & participants at ICACEA-15. It provides a unique opportunity for educators, experts and scholars of higher education from all over the world to convene and share novel ideas in the field of Computer Engineering & Applications.

I am delighted to learn that Department of Computer Science & Engineering is organizing this event. I must congratulate the members of the organizing committee for ICACEA 2015. I am sure that the department will continue to strive for academic excellence & will organize such events at International level in the future as well.

Such higher education conference will also offer strategies to improve and to boost the global reputation of institutions of higher learning.

I assure that the Management will extend all the possible help for such initiatives in the future also. I believe the conference will surely prove conducive to all in equal length.

Shri Nitin Agarwal

Chairman-IMS Society

Message by Chief Patron

I extend a warm welcome to the experts, researchers and engineers to take part in the second International Conference on "Advances in Computer Engineering & Applications" ICACEA-2015. I am truly proud that the Department of Computer Science & Engineering of IMS Engineering College has managed to organize such an important conference in the niche area of Computer Science, Engineering & Applications, which has attracted academic and industrial participation, nationally and internationally. With such diverse and relatively large participation, I am sure that this conference will achieve its intent - to serve as an effective platform for us and the research community to learn, share and supplement each other's research, while keeping abreast of the latest trends in this arena. We invite you to use this conference to create new, or to strengthen existing, partnerships between the scientific community, publishers, policy makers and society.

The Program Committee has packed the conference with a host of expert key note speeches, pre-conference tutorials, invited talks and around 200 research paper presentations in 6 parallel sessions of 4 technical rounds along with many innovative project presentations. I congratulate them for this astronomical effort.

We sincerely hope that the conference becomes a grand success.

Shri Sanjay Agarwal

Treasurer, IMS Society

Message by General Chair

On behalf of IMS Engineering College, it is a proud privilege to welcome all the distinguished speakers, participants & guests. ICACEA-2015 is an outcome of our continuing efforts & pursuit towards academic excellence. IMSEC is committed towards providing such useful platforms for educators to exchange knowledge & contribute to meaningful research.

Computer science is undergoing a fundamental change and is reshaping our understanding of the world. Its applications are so widespread & rooted into our lives today that it is impossible to even think about a life without computers.

I must congratulate the Department of Computer Science & Engineering for their sincere efforts in organizing ICACEA-2015. I am sure that the department will continue to organize such events at International Level in the future as well.

On behalf of IMSEC, I extend my best wishes to all the participants & the organizing team. I am sure ICACEA-2015 will be a huge success.

Thank You…

Prof. (Dr.) S. P. Pandey

Director, IMS Engineering College, Ghaziabad

Message by Wassafi Hassan EI-Sreihin

AFRICAN-ASIAN RURAL DEVELOPMENT ORGANIZATION
ORGANISATION AFRICANO-ASIATIQUE POUR LE DEVELOPPEMENT RURAL
المنظمة الأفريقية الآسيوية للتنمية الريفية

(An autonomous inter-governmental organization established in 1962)

MESSAGE

I am extremely pleased to know that the Department of Computer Science & Engineering, IMS Engineering College is organising the International Conference on "Advances in Computer Engineering & Applications (ICACEA)" on 19-20 March 2015.

I highly appreciate that the Department is organising the Conference on such a topical theme and is bringing together renowned researchers, scientists, engineers and experts from academia and industry from different parts of the world to share their diverse and rich experiences and knowledge in the fast emerging areas of computer engineering, information technology and their applications. I trust that this highly technical and specialized scientific conglomeration would help the aspiring students, scholars and others to further sharpen and improve their technical knowledge which in turn would pave the way for their career advancement. In fact, the effective utilization of advances in computer engineering and applications in different fields, including agriculture sector, has raised all round efficiency, offers more conveniences and greater safety to the masses. There is no doubt that computer engineering and applications have a pivotal role to play in achieving a better world. Since there is a gathering of eminent experts, the proceedings of the Conference would be of high class and result in some fruitful outcomes.

I, once again thank the organizers for holding the Event and convey my best wishes for successful deliberations and hope that a set of recommendations would be adopted that would guide the pace of future advancement in this field.

Eng. Wassfi Hassan El-Sreihin
Secretary General

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Message by Dr. Janice Darbari

My Heartiest congratulations to IMS Engineering College, Ghaziabad, on organizing 2015 International Conference on Advancs in Computer Engineering and Applications.

I am glad to note that the students of this college are being head hunted by the corporate sector and by their outstanding talent have become important for the industry all over the world.

I am sure that this International conference will be historical and outstanding. All my good wishes are with you.

Dr. Janice Darbari
Honorary Consul General Montenegro

Message by Bernd Markscheffel

Bernd Markscheffel is Akademischer Rat at the Chair of Information and Knowledge Management at Technische Universitat Ilmenau, Germany. He received a Doctoral Degree (Dr. Ing.) in Applied Informatics.

It is undeniably a great pleasure to know that Department of Computer Science & Engineering of IMS Engineering College, Ghaziabad, India, , which is a premier establishment in the field of education, is now organizing second international conference on "Advances in Computer Engineering & Applications " (ICACEA-2015).

The participation of a large number of eminent thinkers, scientists, educationists, and students on this joyful occasion would have a meaningful impact on technology.

I take this occasion to accolade the academic and administrative staff of the institution and express my best wishes to them for all the future undertakings.

Prof. Bernd Markscheffel
Ph.D.,Technische Universitat Ilmenau

Message by Dr. Narendra Kohli

It given me immense pleasure to know that Department of Computer Science & Engineering, IMS Engineering College, Ghaziabad is organizing an 2015 International Conference on Advances in Computer Engineering & Applications (ICACEA-2015) during March 19, 20 2015.

Through this conference the scientists, Engineers, Researchers, and Experts from Industry and Academia from across the globe will get an opportunity to share their knowledge and experiences. The thoughts and ideas evolve during the course of the conference will pay a pivotal role n technological advances and innovative developments.

I am sure that this conference will be a milestone in furthering the horizon of knowledge of participants.

I offer my best wishes to the organizers for the success of ICACEA-2015.

Dr. Narendra Kohli
Head-CSE, HBTI, Kanpur

Message by Vipul Kocher

I congratulate IMS for organizing an International Conference on Advances in Computer Engineering and Applications. These conferences introduce the students to the latest research in their area of interest and ignite curiosity and hunger for learning. It also gives the students an opportunity to interact with leading figures from the Industry and Academia, broadening their horizons and giving them networking opportunities. I also hope that this will give students a welcome respite from the gruelling academic sessions, refresh and rejuvenate their minds. My best wishes to IMS, speakers as well as all the participants.

Vipul Kocher
Director-ITB, Co-Founder: SALT

Conference Committee

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Shri Sanjay Agarwal

Treasurer, IMS Society, Ghaziabad

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Prof. (Dr.) N. Sundarajan, *EEE, NTU, Singapore*

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Mr. Vipul Kocher, *Director-ITB, India*

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Prof. N. U. Khan, *IMSEC*

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Message from Program Chair

On behalf of the Organizing Committee, I am honored and delighted to welcome you to the International Conference on Advances in Computer Engineering & Applications (ICACEA-2015) which is technically Co-Sponsored by IEEE UP-Section. I extend a warm welcome to all of the distinguished speakers, guests and participants of ICACEA-2015

ICACEA-2015 will be the second conference in the series. ICACEA-2014 was a great success where more than 100 participants representing various industry & academic institutions presented their work. The conference is being organized annually by the department of Computer Science & Engineering, IMS Engineering College.

The conference this year explores recent & future advances in Computer Engineering & Applications. We are glad to receive more than 600 papers from authors across the country & abroad. The received papers have been peer reviewed by experts in the field at three levels and only 15-20% of the received papers with not more than 5-10 % of plagiarism are finally accepted for presentation. *The accepted & presented papers will be published at "IEEE Explore". We have sincerely tried to accommodate original & quality research work by authors.* We are also organizing "Innovation Meet" on 20th March as a part of ICACEA-15 to encourage professional students to present their innovative thoughts & solutions.

ICACEA-2015 is the result of sincere efforts by the members of the organizing team particularly Dr. Avdhesh Gupta, Conference Convener. I am thankful to all the members of the organizing committee. As Program chair for ICACEA-15, I am sure that this conference will serve as a useful learning platform for faculty, researchers & industry professionals.

Dr. Pankaj Agarwal

Program Chair, ICACEA-2014

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Message by Technical Chair

I extend my most sincere welcome to all attendees of this second international conference on "Advances in Computer Engineering & Applications" (ICACEA-2015) being organized by the Department of Computer Science & Engineering of IMS Engineering College.

As in the past, this conference has included a diversity of topics presented by authors from many different institutions. This brings a plurality of interests and perspectives to a single location. I hope all the participants will take advantage of this opportunity and contribute, through presentations, discussion and interaction, to the development of new ideas and new directions in research and applied technology.

In addition to the many technical sessions, the conference organizing committee is going to organize innovative project meet also. I hope all the dignitaries and participants will find the conference, including the keynote speakers, the technical sessions and other program events educational and interesting.

Finally, I would like to thank you all for your participation and hope that ICACEA-2015 will promote productive information exchanges and collaborations in R&D.

Dr S N Rajan
Dean (R&D)
IMS Engineering College

Message from Convener-ICACEA-2015

On behalf of the ICACEA-2015 Program Committee, I would like to welcome all delegates and participants to the 2015 International Conference on Advances in Computer Engineering & Applications (ICACEA-2015), technically co-sponsored by IEEE UP Section India, at IMS Engineering College.

The Main objective of this conference is to explore the technological advances in the design and development of Computer Applications in different Engineering Fields and to discuss various ways to disseminate awareness of emerging developments in Computer Engineering Applications. The conference will provide a unique platform for practitioners and researchers of the IT industry, Government and academia to share their views on the developments, on-going researches and future of computing Technologies. This conference will examine research and development at national & international level. The peer reviewed & presented papers will be published in the IEEE Xplore along with e-proceeding. The soft copy (DVD) of the conference proceeding with full papers is provided to the all authors & participants.

The overwhelming response to our call-for-papers indicates the popularity of this conference and confirms that ICACEA-2015 has become the world-wide forum for all aspects of Computer Science & Engineering. We have received 436 papers from all over the world. After the review process, 204 papers were selected for presentation. Thanks to the response, all important fields of Computer Engineering & Applications and exploitation are covered by the contributions. To our pleasure several invited sessions has been organized by Eminent Academician and Industrialists, which opens the mind of the researchers beyond one's own field by looking into complementary fields. Apart from the inaugural, guest talks, and valedictory sessions, the conference includes four technical rounds with six parallel sessions in each round.

I would like to express my sincere thanks to all authors for their outstanding contributions and in particular the members of the program board for their competent evaluation of the large number of submissions. The organizing committee of ICACEA 2015 has put in their best efforts to organize this event. Likewise, I would also like to express my appreciation to our invited guests, program, as well as to the invited chairs for their careful preparation of the invited sessions.

Dr. Avdhesh Gupta
Convener-ICACEA-2014

List of accepted paper for ICACEA-2015

SID	AUTHOR(S)	PAPER TITLE
1	SWATI SHARMA AND SHIKA RAI	DETERMINING MINIMUM SPANNING TREE IN AN UNDIRECTED WEIGHTED GRAPH
8	MUGDHA SHARMA AND ANKIT GOYAL	AN APPLICATION OF DATA MINING TO IMPROVE PERSONNEL PERFORMANCE EVALUATION IN HIGHER EDUCATION SECTOR IN INDIA
14	R JOTHI AND APARAJITA OJHA	ON MULTI-SECRET SHARING USING HILL CIPHER AND RANDOM GRIDS
21	NEHA GOEL AND CHANDRA KUMAR JHA	PREPROCESSING WEB LOGS: A CRITICAL PHASE IN WEB USAGE MINING
30	GOUTAM SARKER, SILPI DHUA AND MONICA BESRA	A LEARNING BASED HANDWRITTEN TEXT CATEGORIZATION
31	GOUTAM SARKER, MONICA BESRA AND SILPI DHUA	A PROGRAMMING BASED HANDWRITTEN TEXT IDENTIFICATION
32	ASIF MUSHTAQUE AND HARSH DHIMAN	IMPLEMENTATION OF NEW ENCRYPTION ALGORITHM WITH RANDOM KEY SELECTION AND MINIMUM SPACE COMPLEXITY
38	NEHA SINGH AND KIRTI TYAGI	IMPORTANT FACTORS FOR ESTIMATING RELIABILITY OF SOA
41	AHEIBAM DINAMANI AND RUPABAN SUBADAR	PERFORMANCE OF DUAL MRC OVER NON-IDENTICAL TWDP FADING CHANNELS
42	AHEIBAM DINAMANI AND RUPABAN SUBADAR	CAPACITY OF DUAL MRC WITH ADAPTIVE TRANSMITTERS OVER NON-IDENTICAL TWDP FADING CHANNELS
44	ASIF HASSAN AND RAKTIM KUMAR MONDOL	THEORETICAL MODELING OF CURRENT MEASUREMENT IN NANOSCALE DEVICE CONSIDERING GREEN'S FUNCTION FORMALISM
47	AHEIBAM DINAMANI AND NAMEIRAKPAM LOYALAKPA	PERFORMANCE COMPARISON OF DIVERSITY RECEIVERS OVER TWDP FADING CHANNELS
51	SAHIL NEELAM, SANDEEP SOOD, SANDEEP MEHMI AND SHIKHA DOGRA	ARTIFICIAL INTELLIGENCE FOR DESIGNING USER PROFILING SYSTEM FOR CLOUD COMPUTING SECURITY: EXPERIMENT
53	DEEPIKA SHERAWAT	MINING EMOTIONS (ANGER & FEAR) FROM INDIAN ARMY FANS PAGE ON FACBOOK
61	PREETI GUPTA AND DR.PANKAJ AGARWAL	EXPERIMENTAL STUDY & ANALYSIS OF GENETIC OPERATORS FOR ALIGNMENT OF MULTIPLE BIOLOGICAL SEQUENCES
64	SHIKHA DOGRA, SANDEEP SOOD, SANDEEP MEHMI AND SAHIL NEELAM	SECURITY PRICING: A CATALYST FOR THE LARGE SCALE ADOPTION OF CLOUD COMPUTING
66	ASIF HASSAN	ANALYTICAL FORMULATION OF GRAPHENE NANORIBBON VARACTOR DIODE
74	RAGHAV MADAN, RISHABH GUPTA, BHAWNA SINGH NIRWAN AND ANUJ GROVER	COMPARATIVE ANALYSIS OF SRAM CELLS IN SUB- THRESHOLD REGION IN 65NM
75	ANKIT VERMA AND PREM CHAND VASHIST	ENHANCED CLUSTERING ANT COLONY ROUTING ALGORITHM BASED ON SWARM INTELLIGENCE IN WIRELESS SENSOR NETWORK
76	SHASHI SHAW AND PRASENJIT CHOUDHURY	A NEW LOCAL AREA NETWORK ATTACK THROUGH IP AND MAC ADDRESS SPOOFING
78	KALKA DUBEY, MOHIT KUMAR AND MAYANK CHANDRA	A PRIORITY BASED JOB SCHEDULING ALGORITHM USING IBA AND EASY ALGORITHM FOR CLOUD METASCHEDULAR
80	NIRANJAN LAL AND DR.SHAMIMUL QAMAR	COMPARISON OF RANKING ALGORITHMS WITH DATASPACE
86	SANDIP ROY, RAJESH BOSE AND DEBABRATA SARDDAR	A NOVEL REPLICA PLACEMENT STRATEGY USING BINARY ITEM-TO-ITEM COLLABORATIVE FILTERING FOR EFFICIENT VORONOI-BASED CLOUD-ORIENTED CONTENT DELIVERY NETWORK
93	SWATI CHAUHAN, TANYA MATHUR AND RASHMI SHARMA	SURVEY OF INTENTIONAL ENTERPRISES THREATS USING SOCIAL ENGINEERING EXPLOITS
94	SUSHIL KALORE AND PRASHANT	A REVIEW ON EFFICIENT ROUTING TECHNIQUES IN WIRELESS

	REWAGAD	SENSOR NETWORKS
95	ANURAG MISHRA	AN ENHANCED AND EFFECTIVE PREEMPTION BASED SCHEDULING FOR GRID COMPUTING ENABLING BACKFILLING TECHNIQUE
96	DABBU MURALI AND AVULA DAMODARAM	SEMANTIC DOCUMENT RETRIEVAL SYSTEM USING FUZZY CLUSTERING AND REFORMULATED QUERY
102	MONU KUMAR AND B.K. GUPTA	SECURITY FOR BLUETOOTH ENABLED DEVICES USING BLIPTRACK BLUETOOTH DETECTOR
103	BHAGYASHREE VAIDYA AND PROF.RAM MANGRULKAR	DESIGN AND DEVELOPMENT OF PEER TO PEER WEB CACHING TECHNIQUE FOR MOBILE AD-HOC NETWORKS-REVIEW
104	RAMACHANDRARAO KURADA AND DR. KARTEEKA PAVAN KANADAM	TEACHING-LEARNING-BASED OPTIMIZATION STATE-OF-THE-ART
109	RAJ KAMAL KAPUR AND SUNIL KUMAR KHATRI	ANALYSIS OF ATTACKS ON ROUTING PROTOCOLS IN MANETS
110	ATUL TRIPATHI AND DEO PRAKASH VIDYARTHI	TASK ALLOCATION ON CLOUD RESOURCES USING ANALYTIC NETWORK PROCESS
112	VAAHEEDHA KFATHEEN AND NAZREEN BANU	MIM-MAM: A NEW TASK SCHEDULING ALGORITHM FOR GRID ENVIRONMENT
115	ROSHNI JAMGADE, SHRIKANT AMBATKAR AND SANDEEP KAKDE	DESIGN AND IMPLEMENTATION OF PN SEQUENCE GENERATOR USING VEDIC MULTIPLICATION
116	AMRITPAL SINGH	IMPLEMENTATION MODEL FOR ACCESS CONTROL USING LOG BASED SECURITY: PRACTICAL APPROACH
118	DEEPA RAJ AND SEEMA GUPTA	FRAMEWORK OF ADAPTIVE LOSSLESS COMPRESSION WITH BLOCK WISE DATA
123	ANUP BURANGE AND HARSHAL MISALKAR	REVIEW OF INTERNET OF THINGS IN DEVELOPMENT OF SMART CITIES WITH DATA MANAGEMENT & PRIVACY
124	MANAS SINGHAL AND RAJESH MEHRA	LAYOUT DEVELOPMENT OF AREA EFFICIENT LO-SKEWED EVEN PARITY GENERATOR
125	MANISH TRIKHA AND RAJESH MEHRA	AREA-EFFICIENT LAYOUT DESIGN OF COMPARATOR USING CASCADED TECHNIQUE
129	RICHA SHARMA, PRERNA GAUR AND A. P. MITTAL	PERFORMANCE EVALUATION OF CUCKOO SEARCH ALGORITHM BASED FOPID CONTROLLERS APPLIED TO A ROBOTIC MANIPULATOR WITH ACTUATOR
130	SHIVANI SINGH	AN EFFICIENT FRAMEWORK FOR MINING BIOLOGICAL NETWORK
131	AUSAF UMAR KHAN, YOGESH SURYAWANSHI, SANDIP KAKDE AND DR. MANISH CHAWHAN	DESIGN AND IMPLEMENTATION OF HIGH PERFORMANCE ARCHITECTURE FOR PACKET CLASSIFICATION
132	DEEPAK SINWAR	OUTLIER DETECTION FROM MULTIDIMENSIONAL SPACE USING MULTILAYER PERCEPTRON, RBFNETWORK AND PATTERN CLUSTERING TECHNIQUES
134	BHAVYA AND MAHAK	DATA MINING IN MEDICINE: CURRENT ISSUES AND FURTHER TRENDS
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Program Schedule (19th - 20th March, 2015)

DAY 1 (Thursday, 19th March 2015)		
S. No.	**Time**	**Activity**
1	9.00 AM-10.00 AM	Registration and Breakfast
2	10:00 AM – 10.05 AM	Welcome of Guests
3	10:05 AM - 10:10 AM	Lightening of Lamp
4	10:10 AM - 10:15 AM	Bouquet Presentation
5	10:15 AM - 10:20 AM	Event briefing
6	10:20 AM - 10:30AM	Welcome Address by Director
7	10:30 AM - 10:45 AM	Address by Guest of Honour, Prof. (Dr.) S. N. Singh, IIT Kanpur.
8	10:45 AM – 11.00 AM	Address by H.E. (Dr.) Janice Darbari, Honorary Consul general Montenegro
9	11.00 AM – 11.15 AM	Address by Hon'ble Wassfi Hassan El Sreihin, Secretary General, African Asian Rural Development Organizer
10	11.15 AM - 11:30 AM	Address by H.E. Darja Bavdaz Kuret, Ambassador, Republic of Slovenia.
11	11:30 AM – 11.45 P.M	Address by Vice Chancellor, UPTU, Lucknow
12	11.45 AM – 11.50 AM	Inauguration of Conference E-Proceedings
13	11.50 AM - 12:50 PM	Address by Keynote Speaker by Prof. (Dr.) P. Gupta, Director, NITTTR Kolkata.
14	**01:00 PM – 01:45 PM**	***Lunch***
15	01:45 PM – 03:15 PM	Technical Session A (6 Parallel Sessions)
16	03:20 PM – 04:50 PM	Technical Session B (6 Parallel Sessions)
17	**04:50 PM – 05:00 PM**	***Tea***

ICACEA-2015

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UP SECTION

International Conference on Advances in Computer Engineering & Applications
Technically co-sponsored by IEEE UP Section India

Program Schedule (19th - 20th March, 2015)

DAY 2 (Friday, 20th March 2015)		
1	09:00 AM – 10:00 AM	Registration & Breakfast
2	10:00 AM - 10:05 AM	Welcome of Guests
3	10:05 AM- 10:15 AM	Address by His Excellency Francois Balmuene, Ambassador, Republic of Congo
4	10:15 AM – 10:30 AM	Address by Keynote Speaker by Prof. (Dr.) S. Rizvi
5	10:30 AM – 10:45 AM	Keynote Speaker by Prof. (Dr.) S. Chakraverty, HOD-CSE, NSIT, New Delhi.
6	10.45 AM – 11.00 AM	Keynote Speaker by Mr. Vipul Kocher, Director, Indian Testing Board.
7	11.00 AM – 11.15 AM	Keynote Speaker by Prof. (Dr.) Narendra Kohli, HOD-CSE, HBTI, Kanpur.
8	11:15 AM - 1:15 PM	Technical Session C (6 Parallel Sessions)
9	**01:15 PM – 02:00 PM**	***Lunch***
10	02:00 PM – 04:00 PM	Technical Session D (6 Parallel Sessions)
11	**04:00 PM – 04:15 PM**	***Tea***
12	4:15 PM – 5:00 PM	✓ Plenary Session ✓ Best Paper Award & Distribution of Certificates ✓ Vote of Thanks

ABSTRACT OF PAPERS

Determining Minimum Spanning Tree in an Undirected Weighted Graph

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Abstract

This paper proposed a new algorithm to find a minimum spanning tree of an undirected weighted graph. This new algorithm provides a fresh approach to produce a minimum spanning tree. A minimum spanning tree is a sub graph of any undirected weighted graph that gives the minimal cost valued edges to reach every node of any graph. The proposed algorithm is named as RAY algorithm for determining the minimum spanning tree. We named this new algorithm as RAY, as it gives a new ray of hope in the field of graphs that can be used as a better option for finding the minimum spanning tree of any undirected weighted graph with less duration of time as well as with an easy approach. RAY has less complexity with respect to time for finding the minimum spanning tree of any graph in comparison to other algorithms like prim's algorithm and Kruskal's algorithm which are mostly used to find a minimum spanning tree of the graph. RAY algorithm select any one node of the given graph as a root node and then it joins every edge connected to that node, which do not form any cycle in the graph. This process is repeated until we traverse each node of the graph and the edges those forms cycle during this process are stored separately. Now only these separately stored edges are traversed and we check in the graph for maximum weighted edge from the edges that are coming in the cycle which is formed due that particular separately stored edge. If there is any edge in the cycle which is greater in weigh than that of separately stored edge then we discarded maximum weighted edge and the new edge which we stored separately is taken into the minimum spanning tree. This same procedure is repeated for each edge that we stored separately. At the end of this procedure we get a tree which is the minimum spanning tree of the given graph by using RAY algorithm.

An Application of Data Mining to Improve Personnel Performance Evaluation in Higher Education Sector in India

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Abstract

Data mining is a process of extracting knowledge from large databases. Knowledge is appreciated as ultimate power now a days and considered as very important factor for the success of any organization because it has impacted the role of people working in that organization. In last decade, the higher education sector in India has grown radically. Thus HR management has implemented various improvements and it is hard for organizations to retain a motivated and competent workforce. Clever

investment in human resource and its effective management has become very necessary today. HRM in higher education sector is further complicated by qualitative and multidimensional definition of "performance" of an academician (employee) in this sector. This paper aims to propose a model for predicting employee performance in higher education institutes with the help of classification and prediction techniques of data mining. The objective of model is to facilitate decisions in a challenging and emerging field of HRM in higher education sector.

On Multi-Secret Sharing using Hill Cipher and Random Grids

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Abstract

This paper presents a multi-secret sharing scheme using Hill cipher and random grids. The scheme is an extension of visual secret sharing scheme for gray scale images introduced in [13] by Chen. The proposed scheme provides increased security with lossless image recovery and no pixel expansion. Numerical results demonstrate the efficiency of the scheme.

Pre-processing Web logs: A Critical phase in Web Usage Mining

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Abstract

Web usage mining refers to finding out user access patterns from the web logs of a website. The web logs obtained are highly unstructured and this very nature of web logs makes them unsuitable for mining directly. Hence they go through a stage called pre-processing which not only makes them suitable for analysis but reduces the file size significantly. This paper explores this pre-processing phase in detail and proposes a total and absolute tool for the same which reduces the irrelevant and noisy data and transforms it into a form so that it can be readily used for analysis. The tool has been referred to as total and absolute as after cleaning the data it shows us a summary statistics of the records at the end once they have been preprocessed. The summary statistics highlights the number of records fed as input, elements obtained after carrying out preprocessing and the time utilized in accomplishing the task. Finally it exports the preprocessed data obtained into a .log file which can be very easily imported in any data mining utility. The features of summary statistics and export data can be considered as a distinguishing feature from the other tools which have been proposed earlier.

A Learning Based Handwritten Text Categorization

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Abstract

In the present work a learning based hand written text categorization technique using Malsburg Learning BP Network combination has been designed and developed. This combination is used to identify alpha numerals and thereafter convert the handwritten text into printed one via appropriate word formation. Groups of text belonging to different subjects are fed to this system, and the system extracts the salient features in terms of attributes in intra groups. The commonality among the inter groups are thereafter discarded. The attributes or salient features thereby learned are later used as glossary for each group for

performing unlabeled text categorization. The performance evaluation of this system with labeled test texts using standard Holdout Method in terms of accuracy, precision, recall, f-score is appreciable. Also the learning and performance evaluation time is affordable.

Learning based Handwritten Text Categorization

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Abstract

A hand written text categorization technique using supervised and unsupervised learning is proposed in this work. The learning system based on neural network is used for alpha numeral identification. The identified characters are subsequently merged to convert the handwritten text into the closest printed form. A word matching algorithm along with a programmed glossary finds out the most appropriate words and forms the printed text thereafter. The printed text is identified by matching the keyword of the text with the programmed glossary of different subjects. Once the text is identified, the inappropriate words in the textual context are corrected to match the respective subject of the text. This further improves the meaningfulness of the identified handwritten text. Holdout method is attempted for performance evaluation.

Implementation of New Encryption Algorithm with Random Key Selection and Minimum Space Complexity

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Abstract

In this paper, we proposed our new symmetric key encryption algorithm with reduced space complexity (AM Encryption Algorithm- AMEA). According to disk encryption theory an encryption technique should use less than or equal to the size of the original file size. There are two most important parameters or characteristics of algorithm time and space. An algorithm should require minimum time to perform their function and should have minimum space complexity (space complexity in terms of storage space after the encryption or the storage space required to store ciphertext). Different types of algorithm has been designed some of them provides better security but the space complexity of all existing algorithm is high. So, we proposed a new cryptographic algorithm based on symmetric key stream cipher that provides better security with minimum space complexity. This algorithm is not same as previous stream cipher algorithm (the most commonly used RC4) it has some new features such as Random Key Selection with transposition that provides better security.

Important Factors for Estimating Reliability of SOA

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Abstract

Service-Oriented Architecture (SOA) is basically a collection of individual services and these services interact with hence. Each interaction is loosely coupled and self-contained, so that each interaction is independent of any other interaction. Due to its complex nature, reliability estimation is a very tedious task. In any software system, reliability is one of the most important non-functional requirement and there are many factors that affect the systems reliability. In the previous work, there were many factors defined to estimate the reliability of a software system. In this paper, some new factors have been defined that affect SOA reliability.

Performance of Dual MRC over non-identical TWDP Fading Channels

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Abstract

Performance expressions of Dual maximal ratio combining (MRC) receiver are derived for the receiver over no identical two wave diffused power (TWDP) fading channels are derived. The probability density function (PDF) of the receiver output signal-to-noise ratio (SNR) is derived using characteristics function of the output SNR expression. The derived PDF expression is then used to obtain the various performance measures such as outage probability and average symbol error rate for both coherent and non-coherent modulation schemes. Studies on the effects of fading parameters (K and Δ) and modulation techniques on the performance of the diversity system are carried out. The numerically evaluated results are validated with either Monte Carlo simulation or published results.

Capacity of Dual MRC with Adaptive Transmitters over non-identical TWDP Fading Channels

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Abstract

One of the significant indicators of the Quality of Service that can be achieved by a wireless communication system is the findings of capacity analysis. Hence, these results are of enormous significance to wireless communication system designers and engineers. Channel capacity expressions for dual branch Maximal Ratio Combining (MRC) diversity system with various adaptive transmission techniques over two wave diffuse power (TWDP) fading channels are derived. The probability density function (PDF) based method is applied for the derivation of these capacity expressions. The consequences of fading parameters K and Δ and diversity order M, on the capacity of MRC receiver with different adaptive transmission techniques have been examined. Finally, a comparison of the capacity of the receiver with various adaptive transmission schemes over TWDP fading channel is also presented.

Theoretical Modeling of Current Measurement in Nano-scale Device Considering Green's Function Formalism

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Abstract

The most simplistic prediction of carrier transport through the nano devices calculated bynon-equilibrium Green's function method (NEGF). Recursive algorithm is one of the convenient method of tracing electron transport through the device by measuring the current density .Starting from the charge density equation using NEGF method the current density and current passed through the nano-scale device can be calculated. In this paper we will broadly discuss about NEGF method of calculating charge density through nano-scale material. Upon this we will observe a simple method of calculating current and amount of

charge through nano-scale material by multiplying the calculated charge density, current density with the volume of nano-scale device considering same size in all direction.

Performance Comparison of Diversity Receivers over TWDP Fading Channels

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Abstract

A signal propagating in wireless channels encounters fading effect, which degrades the performance of wireless communication systems. Information about the performance of communication systems is significant for assuring service availability and sustainability, as well as quality of service in telecommunication networks. Bit error rate, average output Signal to Noise Ratio, outage probability, amount of fading, level crossing rate, etc. are some of the important performance measures for communication systems. One of the efficient counteracting methods that can modify the disparaging outcome of fading for superior performance of receiver is the diversity combining. Some of the important diversity combining schemes is selection combining, equal gain combining and maximal ratio combining. A comparative study of these diversity receivers over two wave diffuse power have been carried out to evaluate the impact of fading parameters K and Δ on their performance.

Artificial Intelligence for Designing User Profiling System for Cloud Computing Security: Experiment

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Abstract

In Cloud Computing security, the existing mechanisms: Anti-virus programs, Authentications, Firewalls are not able to withstand the dynamic nature of threats. So, User Profiling System, which registers user's activities to analyze user's behavior, augments the security system to work in proactive and reactive manner and provides an enhanced security. This paper focus on designing a User Profiling System for Cloud Environment using Artificial Intelligence Techniques and studies behavior (of User Profiling System) and proposes a new hybrid approach, which will deliver a comprehensive UPS (User Profiling System) for Cloud Computing Security.

Mining Emotions (Anger & Fear) From Indian Army Fans Page on Facebook

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Abstract

Usage of social media is becoming an inescapable part of all of us. When people with similar interest interact with each other they eventually lead to a discussion. While a person expresses his point of view then there is an impact of his words those who are listening by having some perceptions in their mind. How a person perceives or accepts any view of some other person also has an impact on their thinking as

well. They either have a positive impact or a negative impact on them, and this impact leads to some positive or negative comments by that person. And at certain stages the negativity in the group increases so much that it leads to some ill-impacts on the society.

Experimental Study & Analysis of Genetic Operators for Alignment of Multiple Biological Sequences

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Abstract

This paper presents an experimental work to observe the effect of various genetic algorithm (GA) operators for alignment of multiple biological sequences which is a classical NP complete problem popularly known as multiple Sequence alignment (MSA) problem with its application area in computational molecular biology. We have tried to solve the problem by varying various GA parameters in multiple ways and observed the effect of these on alignment. It is to be noted that the purpose of the presented work is not at all to propose an efficient GA based method for solving MSA problem but just to observe the effect of varying GA parameters. The proposed observations can surely help those who wish to apply GA method to solve the MSA problem by choosing the correct operators & parameters.

Security Pricing: A Catalyst for the large scale adoption of Cloud Computing

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Abstract

Pricing of the services, is one of the main factor in deciding the will of any organization, for the growth, In the existing Security Mechanisms of the Cloud, the way of providing Security to Cloud user is purely Provider-driven and user has no role in deciding, which security capabilities, he actually wants, based on the significance of his Cloud Instance. As a result of which, a cost inefficient Security Pricing persists in Cloud Computing. This paper focuses on exploring the pricing of existing Security mechanism and proposes a new user-driven approach, which will prove to be a cost-efficient in regard of former approach and will play a role of catalyst in large scale adoption of the Cloud Computing.

Analytical Formulation of Graphene Nanoribbon Varactor Diode

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Abstract

Graphene nanoribbons (GNRs) are now top of the topics in nanoscale based research work. It is because the electronic device made by GNR can be integrated in larger amount on a single chip. Also because of their high mobility of carrier and higher variation of Fermi energy in response to gate voltage GNR is an extraordinary unique material in designing varactor diode. In this paper we will observe the width of GNR

and bandgap energy. Then we will observe the insulator capacitance, quantum capacitance as well as gate capacitance for varying the different finger of GNR which are different in width. Then we will observe the quality factor for different width of finger of varactor diode which is made by GNR in response to their gate voltage.

Comparative Analysis of SRAM Cells in Sub- Threshold Region in 65nm

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Abstract

Continuous technology scaling and the growing trend of low power applications has led to focus on ultra low voltage operating memories. This work presents a report on different configurations of SRAM cells (6T and 10T) to operate in sub-threshold voltage region.

Enhanced Clustering Ant Colony Routing Algorithm Based On Swarm Intelligence in WSN

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Abstract

Several algorithms and protocols are focusing on enhancing the performance of wireless sensor network with optimum path routing by improving battery life, PDR, reliability, throughput, fault tolerance, network latency, network life span, data assembly, QoS, data delivery models and operating infrastructure. Paper shows the evolution of ant colony techniques and swarm intelligence based on ant colony optimization routing, which is inspired by ant for ACO and bee for bee sensor.

A New Local Area Network Attack through IP and MAC Address Spoofing

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Abstract

A local area network (LAN) is a computer network that interconnects computers within a limited area such as a locality, college, office etc. Though Wi-Fi offers mobility, handiness and is cost effective than LAN connections in setting up, still LAN are being used at Library, Home, Offices for its fast transfer speed and higher reliability. Realizing the different threats associated with LAN based networks and ethically hacking them to make them more secure is what this paper is all about. In this paper, we have pointed out the common and existing attacks in LAN and also proposed a new attack of getting access of internet through different IP address and MAC address of same LAN by examining three Internet Service Providers in India. We have made this attack working by using some very useful but little known software. This paper outlines the way one get access to others internet account and how to deal with it by making people familiar with scanning tool like Advanced IP Scanner and MAC Address Changer.

A Priority Based Job Scheduling Algorithm Using IBA and EASY Algorithm for Cloud Metaschedular

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Abstract

Job scheduling (JS) is one of the most important issues in a Cloud system. The objective of job schedulers in cloud computing is to meet users' requirements and optimize the utilization of cloud resources. To achieve better QoS with high resource utilization in a cloud environment, an improved backfill algorithm (IBA) using balanced spiral (BS) method can be used. Results show that IBA minimizes resource idleness up to a great extent. However, IBA does not provide support for handling job priority and QoS. We need an algorithm to maximize the resource utilization while considering priority.

Comparison of Ranking Algorithms with Dataspace

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Abstract

With increased in digitization the amount of homogeneous, unstructured, semi-structured, structured or heterogeneous data being created and stored is exploding is collectively called “dataspace”. Data being generated from various heterogeneous sources like, digital images, audio, video , online transactions, online social media , data from sensor nodes , click streams for different domains including, retails, medical , healthcare , energy, and day to day life utilities. In business, industries, institutions and organizations, individuals contribute the data volume like technical reports, seminar reports, research papers, dissertations, thesis etc. For instance, 30 billion web pages are accessed or the World Wide Web. With terrific number of pages of that exist today; search engines assume a significant role in the current internet of thing (IOT). So with billions of web pages accessible on the web, a user query entered in the search engine may returns thousands of web pages, and thus it becomes extremely important to rank these results in such a way that the most “related” or “important” or “authorized” pages are displayed first. This job of prioritizing the results is performed by ranking algorithms, and various search engines use different schemes for ranking the results. Ranking of data can also do in heterogeneous data to retrieve information from the dataspace. The aim of this paper is to describe dataspace and present a survey on ranking algorithms, and their comparison, Comparison is done on the basis of some parameters such as main technique use, methodology, and input parameter, and relevancy, quality of results, importance and limitations, search engines and time complexity of algorithms. In this we also explained how ranking can be used in dataspace with challenges to information retrieval from heterogeneous data or from dataspace.

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A Novel Replica Placement Strategy using Binary Item-To-Item Collaborative Filtering for Efficient Voronoi-Based Cloud-Oriented Content Delivery Network

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Abstract

On-demand cloud-oriented content delivery service provision is the challenging task for the most of researchers. Antecedent end users used to request to the central server for accessing information but now a day's massive use of mobile devices upshots delivery of intended contents virtually from edge servers which are scattered over the earth surface. Thus, placing content effectively to appropriate edge servers and searching it from edge servers are two big issues for cloud-oriented content delivery network providers (CCDNPs). To solve these issues, at first we have clustered all edge servers using voronoi diagram to locate each edge server into a particular voronoi cell and also search the requested content from nearest edge server of the requested user current location using Delaunay triangulation over our aforementioned clustering technique. Consequently we have also used item-to-item collaborative filtering for placing content based upon the users' interest. Our proposed content searching technique and replica placement strategy not only solve the users' requirement but also overcome the open challenges of the CCDNPs

Survey of Intentional Enterprises Threats using Social Engineering Exploits

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Abstract

This is a survey report of social Engineering threats that include various phases of social engineering. As security techniques increase, security break techniques will also increase in the same or more ratios. In this paper we are trying to cover most areas of social engineering exploits including: Cause of social engineering in enterprises, various techniques of social engineering, impacts, and popular social engineering cases with comparative study.

A Review on Efficient Routing Techniques in Wireless Sensor Networks

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Abstract

In the 21st century, smart environment wireless sensor networks have become an integral part of our lives. These wireless sensor networks contain large numbers of computing devices i.e. motes, but it has a very limited battery life-time and communication abilities (i.e. capacity, bandwidth etc.). So energy and routing are also major issues for wireless sensor networks. Most of the researchers use different techniques to increase the performance of wireless sensor networks in terms of network life time and using different routing protocols. We propose the multihop neighbor information technique by using

shortcut tree routing protocol in wireless sensor networks. This review paper describes the multi-hop neighbor information technique and routing protocol methodologies which enhance the performance of WSN's.

An Enhanced and effective Preemption Based Scheduling for Grid Computing Enabling Backfilling Technique

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Abstract

Recent improvements in designing the scheduling algorithms for cluster mainly focuses on the advance reservations and Backfilling algorithms. Backfilling has been proposed and launched in various flavors to have an idealistic utilization of the resources and computing capacity of the cluster. However backfilling demands the runtime prediction of the job. Preemption of process in the scheduling queue is done to reduce the starvation and to fulfill the requirements of the proposed algorithm. We have applied the proposed algorithm in the cluster designed through TORQUE and preemption support through BLCR. Another implementation is done for MPI jobs in LAM environment with BLCR as a job checkpoint and restart facility. Proposed algorithm is compared with the Backfilling techniques with preemption support. Algorithm showed around 3%-5% reduction in average turnaround time and 6%-8% increment of throughput rate.

Semantic Document Retrieval System Using Fuzzy Clustering and Reformulated Query

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Abstract

In this paper, we develop an algorithm for document retrieval system through clustering process and query basis. Initially, the pre-processing is applied on whole documents to remove the unnecessary words and phrases of every document. Then the clustering process in applied to make the partition of the documents through the proposed semantic similarity measure used in the possibilistic fuzzy c means (PFCM) clustering algorithm. For each cluster, the index constructed, which contains common important keywords of the documents of cluster. Once the user enter the keyword as the input to the system, it will process the keywords with the WORDNET ontology to obtain the neighborhood keywords and related synset keywords. From the set of keywords obtained from the WORDNET is refined and the refined keywords are matched with the index keywords of the clusters to calculate the matching score. Finally, the documents inside the cluster are released at first as the resultant related documents for the query keyword, which clusters have the maximum matching score values. The experimentation process is carried out with the help of different set of documents to achieve the results, the performance analysis of the proposed approach is estimated by precision, and we proved our proposed approach is outperformed in terms of precision.

Security for Bluetooth enabled devices using BlipTrack Bluetooth Detector

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Abstract

As the Bluetooth technology is growing there is a need of secure communication and to keep their data secret where Bluetooth is used as primary option. There are many attacks possible on Bluetooth technology and associated devices such as denial of service attack, passive eavesdropping and active eavesdropping, man-in-the-middle attacks, message modification, and resource misappropriation. So it is a challenge to detect the attacker. This paper proposed an idea for those Bluetooth enabled devices which uses SSP (Secure Simple Pairing) association models not having Strong security against passive eavesdropping. In this paper we proposed an idea which provides security against passive eavesdropping with the help of BlipTrack Bluetooth detector (BBD) which is a sensor that detects the Bluetooth within the coverage area.

Design and Development of Peer to Peer Web Caching Technique for Mobile Ad-Hoc Networks: A Review

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Abstract

In this paper we analyze one technique for web caching in MANET. MANET stands for Mobile Ad Hoc Network which is an evolving concept. There are many emerging researches focused on MANET aspects such as routing and caching. Among them, the lack of efforts done on MANET web caching is acknowledged. As the node in MANET is moving, the web caching is difficult task. The paper reviews the traditional web caching techniques to improve the performance of MANET. In previous techniques, Better Approach to Mobile Ad-Hoc (B.A.T.M.A.N.) is a web caching protocol which is implemented for MANET. The overall performance of B.A.T.M.A.N. is more time consuming. The proposed technique improves the performance of web application in MANET by reducing internet bandwidth. Also preserves the energy consumption. This peer to peer web caching concept purely focused on web applications in MANET.

Analysis of Attacks on Routing Protocols in MANETs

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Abstract

Mobile Adhoc Networks (MANETs) are networks of mobile nodes which have limited resources in terms of processing power, memory and battery life. The traffic to the destination nodes which are beyond the range of source nodes are routed by the intermediate nodes. The routing in the MANETs is different from conventional infrastructure network since the nodes not only act as end devices but also act as routers. Owing to the resource constraint of the nodes the routing protocols for MANETs have to be light weight and assume a trusted environment. The absence of any infrastructure for security and ever changing topology of the network makes the routing protocols vulnerable to variety of attacks. These attacks may lead to either misdirection of data traffic or denial of services. The mitigation techniques to combat the attacks in MANETs have to work under severe constraints, and therefore it is imperative to study the

vulnerabilities of the routing protocols and methods of launching the attack in detail. This paper attempts to do the same and has reviewed some current literature on mitigation of the routing attacks.

Task Allocation on Cloud Resources using Analytic Network Process

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Abstract

Abstract—Cloud resources are increasing enormously with the growth in cloud technology. Allocating the resources is a cumbersome job as multiple criteria are involved. These criteria most often are dependent on each other. Analytic Network Process is well suited to solve such problems as it caters to dependent criteria that often give the feedback. The work proposes a task allocation model using Analytic Network Process for cloud resources. The model has been simulated and quite good results are obtained.

MiM-MaM: A New Task Scheduling Algorithm for Grid Environment

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Abstract

Grid computing has become most prevalent due to the vast availability and the reduced cost. But without appropriate scheduling mechanisms, under utilization may occur. The need of effective and efficient scheduling algorithms is necessary to use the capabilities of large distributed systems optimally. From the beginning number of algorithms was proposed to reduce total completion time and improvement of load balancing. In this paper, a new scheduling algorithm named as MiM-MaM is proposed based on well known task scheduling algorithms, Min-Min and Max-Min. In the proposed algorithm the drawbacks were rectified by using combined usage of two algorithms. The experimental results show that the proposed algorithm improved the Makespan.

Design and Implementation of PN Sequence Generator using Vedic Multiplication

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Abstract

In wide communication network, signals are transferred and receive. In case of wireless systems transferring a signal over a wide spectrum and providing a security to such signal is a tough task. While transferring a signal extra security is needed to hide the original message signal, to provide such security Pseudo Noise sequence is used. PN sequence uses linear feedback shift register (LFSR). In this paper the generation of PN sequence uses the multiplication. The methodology is used for the design of multiplier Conventional method (Add & Shift) and Vedic multiplier. Add & Shift multiplier is simple method of adding and shifting the multiplicands. A Vedic multiplier is an ancient method of mathematics using Vedic sutras. Uradhava triyakabham (vertically and crosswise) is one of the sutra used for design of fast and efficient multiplication. The comparative analysis of Vedic multiplier and Add & Shift is done. VHDL simulation of both the multiplier shows the efficiency and delay analysis of Vedic multiplier over Add & Shift multiplier.

Implementation Model for Access Control using Log Based Security Practical Approach

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Abstract

This paper proposes an implementation for access control in SQL Server, and the technique is to improve security of the data masking technique devised for secure data warehouse since it stores the sensitive information which needs to be secure from attackers. A large number of techniques have been proposed for the same but based on analysis those techniques produce large overheads. This technique can be implemented in database management system of any kind. By the help of proposed technique, it will get to know the behavior of access strongly based on mining process on intelligently recorded log and other metadata of respective access.

Framework of Adaptive Lossless Compression with Block Wise Data

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Abstract

Lossless compression technique compresses the data file or image file without any changes in the original file. This method is generally applicable for the text data and the medical images. This paper proposes a new methodology to compress online data using an adaptive Huffman tree for encoding and decoding data with lesser height. This technique saves the transmitting power and decreases the communication bandwidth. It also explained the framework of adaptive lossless compression method using block wise data where data is send from sender to receiver dynamically after storing in a medium. Block wise data is a universal lossless data compression technique which takes lesser time to encode and decode

Review of Internet of Things in Development of Smart Cities with Data Management & Privacy

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Abstract

Internet of Things (IoT) is a structure in which objects, people are provided with exclusive identity and the ability to relocate data over a network without requiring two way handshaking between human-to-human i.e. source to destination or human-to-computer interaction. Internet of things has emerged from divergence of wireless technologies. Internet of Things extends internet connectivity ahead of traditional devices like desktop and laptop, smart-phones to a various range of devices and day by day things that develop embedded tools to communicate & interrelate with the external environment through the internet. Internet of Things is a new revolution of the Internet. Objects make them identifiable and they obtain intelligence by making circumstance related decisions by the desirable quality of fact that they can share information about themselves. They can access the data that has been collected by other things. The aim of the Internet of Things is to support "Ubiquity" that enables things to be connected anytime, anywhere, with anything and anyone ideally using any path/network and any service. Over the last few decades, analysis for the development of market strategy and applications along with their economic

strength & its impact on focusing social and physiological, economical growth, technical current trends has been changed dramatically. Over the past four decades, the definition of *Smart Cities* has emerged to mean many things to many people. Meaning of "smart" is utilizing sensitive information and communications technology (ICT) remains consistent with the Internet Technologies to address urban challenges.

Layout Development of Area Efficient Lo-Skewed Even Parity Generator

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Abstract

In digital transmission parity bit is added after every block of data. The use of parity allows the error free transmission of data. There are two types of parities, even parity and odd parity. In this paper an even parity generator's layout has been developed and presented using 50nm CMOS technology. The layout of three bit Even Parity Generator is designed using unskewed and lo-skewed CMOS technologies and the results are compared in terms of power dissipation and area consumption. The proposed layout has shown an area efficiency of 58%. The Lo-skewed circuit also provide better Low-Transient as compared to unskewed circuit.

Area-Efficient Layout Design of Comparator using Cascaded Technique

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Abstract

In this paper a new design of cascaded comparator is described. Comparator is the basic building block of many arithmetic and logical units used in microprocessors and DSP. In the world of new emerging technology it has become essential to develop various new design concepts to reduce the power consumption and chip area. In this paper a semi-custom design of cascaded comparator has been presented and compared with the auto-generated layout on CMOS 90nm foundry technology. The proposed semi-custom design of cascaded comparator has showed an improvement of 35.65 % of total area as compared to auto-generated layout.

Performance evaluation of cuckoo search algorithm based FOPID controllers applied to a robotic manipulator with actuator

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Abstract

A robotic manipulator is a complex nonlinear,coupled and dynamic system. Therefore it is a challenge for the process engineers to design an effective controller for the operation of end-effector of this system. This paper presents Fractional Order Proportional-Integral-Derivative (FOPID) controller for a 2-link planar rigid robot manipulator with actuator for trajectory tracking task. The tuning of controller

parameters is done using Cuckoo Search Algorithm (CSA) and Particle Swarm Optimization (PSO) techniques. The Integral Absolute Error (IAE) and Integral Absolute Change in Control Output (IACCO) having equal weights for both the links are chosen as performance indices for minimization. A comparativestudy is carried out between CSA-tuned FOPID (CSA-FOPID) and PSO-tuned FOPID (PSO-FOPID) controllers for trajectory tracking tasks. The robustness of the proposed controllers is tested for disturbance rejection, model uncertainties, and noise suppression. The numerical simulation results clearly investigate the superiority of CSA-FOPID controllers over PSO-FOPID controllers.

An Efficient Framework for Mining Biological Network

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Abstract

The research community is flooded with large set of data such as the genome sequences of various organisms, micro-array data and so on, of biological origin. This data-volume is rapidly increasing day by day, and the process of understanding this data is lagging behind the process of obtaining it. There is a need to draw a systematic approach to understanding this using computational method. The rapid progress of biotechnology and bio-data analysis methods has led to the emergence and fast growth of a promising new field: bioinformatics. It is a field having incredible amount of bio-data which needs exhaustive analysis. Bio-data is available as, Nucleotide sequences (DNA and RNA sequences), Protein sequences, Genomes and structures in the form of Biological networks (metabolic pathways, gene regulatory network and protein interaction network). In this paper I am presenting a framework to discover frequent patterns and modules from biological networks. From the study of different Biological networks it can be concluded that the best way to analyze and extract the information (frequent functional module) from biological network is through graph mining, since these networks can be modeled into different types of graphs according to the information needs to be extracted. But these graph based mining approach often leads to computationally hard problem due to their relation with subgraph isomorphism. Here I am using graph simplification technique, suitable to biological networks, which make it possible to help the graph mining problem computationally scalable and tractable to very large numbers of networks. So detection of frequently occurring patterns and modules will be a computationally simpler task since the reduction in the effective graph size significantly.

Design and Implementation of High Performance Architecture for Packet Classification

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Abstract

Packet Classification is a core function used in an internet router, firewall, network security and quality of services. A flow of packets is decided by the header fields of incoming packets. Software solutions for packet classification are not suitable for wire-speed processing and not secure. For wire-speed and secure network access, hardware solutions for packet classification are mandatory which can also sustain high throughput at low latency. Memory required for hardware architecture is also a crucial problem. In this paper, we have performed classification of packets using basic XNOR gate. We compare our proposed design with StrideBV. The results obtained by synthesis and stimulation using XilinxISE Design tool 13.1 are presented in this paper.

Outlier Detection from Multidimensional Space using Multilayer Perceptron, RBFNetwork and Pattern Clustering Techniques

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Abstract

As we know that Outlier detection is one of the important aspects of Data Mining. In general Outlier Detection aims to identify potential outliers from datasets. They may sometimes plays important role while taking effective business decisions. This work provides a study of various outlier detection techniques and compares their effectiveness in terms of number of outliers detection, kappa statistic and mean absolute error. Seven algorithms of different categories were tested on three real world datasets to validate the study. We have used pattern based detection of outliers using Multilayer Perceptron, Radial Basis Function Network, Naïve Bayes classifiers and Pattern Clustering techniques viz. K-Means, EM and the Agglomerative Hierarchical Clustering. Experimental results will show that the Hierarchical Clustering outperforms all other algorithms in terms of number of outliers detection, whereas Multilayer Perceptron and J48 Decision Tree have the highest Kappa Statistic. Performance of EM clustering was worst amongst all algorithms because it was unable to classify all the instances of the datasets. RBFNetwork and Naïve Bayes classifiers has almost same performance (which is not so satisfactory) in terms of outlier detection percentage, Kappa Statistic and Mean Absolute Error.

Data mining in Medicine: Current Issues and Further Trends

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Abstract

Data mining is the process of analyzing sets of data and then extracting the meaningful data or knowledge. It is a term synonym with knowledge discovery. The materiality of this review paper is highlighted by the fact that the data mining is an object of research in many areas. In this paper, previous work in area of knowledge discovery from medical data is reviewed. The goal to study this paper is to improve efficiency, decrease human error and help medical practitioners with improved knowledge. Medical data mining is extracting innovative knowledge from the medical data to improve the efficiency, decrease cost and time and construct decision support system with goal of health promotion. We have studied papers from 1999 to 2013 with the aim to discover knowledge from medical data. A total of six medical tasks: screening, diagnosis, treatment, prognosis, monitoring and management are basis for study of each paper and in each task, we considered five data mining approaches: classification, regression, clustering, association and hybrid. For each task, summary and discussion are stated. The current issues and future inclinations are mentioned. We hope this paper will further possibly help to discover new interesting areas for future research.

Developing Mobile Message Security Application Using 3D Playfair Cipher Algorithm

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Abstract

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The theme of this research is to provide security for the messages of an Android phone that contains alphabets, numerals and special characters. This research overrules the functioning of Application Lock and secures the messages by encrypting through 3D-Playfair Cipher(4 X 4 X 4). 3D-Playfair works on trigraph and supports all of the 26 alphabets {A to Z}, the 10 digits {0 to 9} and the 28 basic special characters { ! " # $ % & ' ( ) * + , - . / : ; < = > ? @ [ ] ^ _ | }. 3D-Playfair enhances the security by increasing complexity. Using this application, all the messages will be displayed in the encrypted form on the mobile screen which can be decrypted upon the verification of valid user.

Reducing RMS Noise in CMOS dynamic reconfigurable latched comparator in 50 nm

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Abstract

This paper presents a new dynamic reconfigurable CMOS latched comparator that demonstrates low RMS noise, low offset and high gain. In this dynamic comparator circuit we make an independent inputs transistor and its input inverter circuit PMOS connected to clk1 with tail transistor. The proposed comparator circuit shows better RMS noise response i.e. 704.38μV as compare to previous comparator circuit i.e. 1.1208mV and better output driving capacity as compare to conventional comparator circuit. The proposed comparator is simulated and implemented in LT SPICE 50nm technology.

Dynamic composition of Web-services based on QoS parameters using fuzzy logic

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Abstract

Composition, the process of combining many constituent web-services representing a workflow, is one of the crucial research issues of Service Oriented Architecture. QOS parameters being the illustrious basis for the composition of web-services are the motivation for writing this paper. Since the selection of web-services among many of them with the overlapping functionality is a decision problem, to satisfy user's end-to-end QOS requirements. So, to provide a smart choice to service providers for composition, this paper is a stupendous contribution as it comes up with a membership function that easily prioritizes the candidate web-services to a more finer level on the basis of response time so as to get selected for the composition as well as maximizing the user's satisfaction.

Modified Approximate Lower Triangular Encoding of LDPC Codes

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Abstract

LDPC codes have become the most popular error control code in various fields like telecommunication, magnetic recording etc. due to their high error correcting capability. The Approximate Lower Triangular (ALT) encoding is the most commonly used encoding technique of LDPC codes. This technique though elegant suffers from the shortcoming that when a particular sub matrix of the H matrix obtained after ALT encoding is singular, the technique fails. In this paper a new algorithm is proposed to handle this shortcoming. In this work, a new algorithm is proposed to convert any rectangular sparse. LDPC matrix into a rectangular part and a square upper triangular part. This algorithm can be implemented to encode a general H matrix. In this paper, the above algorithm is further appended to the ALT format of LDPC encoding and another efficient encoding technique is proposed for LDPC codes. Both the proposed

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techniques have a pre-processing step followed by the actual encoding step. Scatter plots of the H matrices (after preprocessing) are shown. BER performance of the new Modified ALT technique is compared with the existing Systematic Approximate Lower Triangular method. The proposed algorithm gives better BER performance.

Honeypot Tools: Classification, Analysis and Comparison

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Abstract

Honeypots act as security resources that are used to catch malign activities, so they may be anatomized and watched. During the past few years, they are called as a safeguard of assets of an organization. They are used to acquire information on interrupters in a network. This paper gives an introduction to the honeypots, their classification, detailed study of commercial as well as open source honeypots tools and comparison between them. This paper may be helpful for readers to secure their resources from intruders by using the freely available honeypots tools.

Retrieval of Software Component Version from a Software Version Database: A Graph Based Approach

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Abstract

The reuse of Software Component is a common practice in the field of software engineering for developing a new software product from existing components. Component based approaches in case of software development is used for reusability. This paper describes how reusable components are stored and how they can be retrieved as per the need depending upon the activity of the required component.

Finding Approximate Head orientation in non-intrusive environment with single camera

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Abstract

Finding head orientation is an important issue in Human Computer Interaction (HCI) for disabled people. It also has applications ranging from drivers attention estimation to monitoring vigilance level of the audience. Head pose detection in non-intrusive or in non-highly specialized environments is, most of the times, difficult to achieve. Most of the work in this domain needs prior knowledge regarding the equipment setup or specialized hardware. We present here an appearance based technique for finding head orientation where environment consist of single camera only. No prior knowledge about environment, like distance between camera and person sitting in front of the camera, is required. Orientations are found in terms of Yaw, Pitch and Roll angles. Our method finds approximate head orientation as we have not calibrated the camera, but it still suits various applications like vigilance

monitoring or HCI systems as these applications require general head rotation patterns rather than exact orientation angles.

Modeling of Services and their Collaboration in Enterprise Cloud Bus (ECB) using UML 2.0

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Abstract

Cloud computing refers to a web service model that delivers on demand based services over the network. Agent based Cloud computing technology has gained more importance recently due to the rapid increase in no of clouds and their services. Modeling and Design methodologies for agent based cloud infrastructure has been a challenging domain. In this paper we propose to model the interaction and collaboration of services in an agent based abstraction framework, called Enterprise Cloud Bus (ECB), using UML 2.0. ECB is an abstraction layer of SaaS architecture, and it is modeled using UML 2.0 focusing on service interaction, service collaboration, service discovery, service scheduling and service dispatching.

Performance Analysis of Training Algorithms of Multilayer Perceptrons in Diabetes Prediction

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Abstract

Artificial Intelligence plays a vital role in developing machines or software that can create intelligence. Artificial Neural Networks is a field of neuroscience which contributes tremendous developments in Artificial Intelligence. This paper focuses on the study of performance of various training algorithms of Multilayer Perceptrons in Diabetes Prediction. In this study, we have used Pima Indian Diabetes data set from UCI Machine Learning Repository as input dataset. The system is implemented in MatlabR2013. The Pima Indian Diabetes dataset consists of about 768 instances. The input data is the patient history and the target output is the prediction result as tested positive or tested negative. From the performance analysis, it was observed that out of all the training algorithms, Levenberg- Marquardt Algorithm has given optimal training results.

Use of Global Positioning System (GPS) to Track Movement of Mobile Node in Proxy Mobile Internet Protocol version 6(PMIPv6)

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Abstract

In PMIPv6, while moving in network, whenever Mobile node (MN) gets connected to new Mobile Access Gateway (MAG), every time MAG needs to verify authenticity of MN. Due to which, there is significant increase in Hand Over Delay. To reduce this, many researchers has proposed that as soon as MN gets disconnected from current MAG, current MAG should sends the authentication information of MN to new MAG to which MN gets connected to next. To predict new MAG, movement of MN should be tracked. In this paper, a method is proposed to track the movement of MN using GPS.

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A Parallel Approach for Region-Growing Segmentation

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Abstract

Image Segmentations play a heavy role in areas such as computer vision and image processing due to its broad usage and immense applications. Because of the large importance of image segmentation a number of algorithms have been proposed and different approaches have been adopted. In this theme I tried to parallelize the image segmentation using a region growing algorithm. The primary goal behind this theme is to enhance performance or speed up the image segmentation on large volume image data sets, i.e. Very high resolution images (VHR). In parliamentary law to get the full advantage of GPU computing, equally spread the workload among the available threads. Threads assigned to individual pixels iteratively merge with adjacent segments and always ensuring the standards that the heterogeneity of image objects should be belittled. An experimental analysis upon different orbital sensor images has made out in order to assess the quality of results.

Energy Efficient Fault Tolerant and Clustering Algorithm Using Alternative Backup Set for Wireless Sensor Network

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Abstract

In this paper, we proposed an efficient algorithm which works on two major issues fault tolerant and cluster formation. Clustering is an approach which helps to maintain the overall communications between the sensor nodes and cluster heads. This proposed algorithm also helps in recovery of cluster from sudden failure of cluster head at any round. An alternative cluster head (back up node) is deploying with all the clusters which activates when they received a HELP message from member sensor nodes whenever the member sensor nodes do not able to reach the cluster head.

Study and Analysis of Particle Swarm Optimization for Improving Partition Clustering

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Abstract

Clustering is a widely used technique in knowledge discovery for finding the similar and hidden patterns from a dataset. There are many techniques available for data clustering such as partition clustering, hierarchical clustering, density based clustering, and grid based clustering. This paper discusses various clustering techniques along with their benefits, drawbacks, characteristics, and applications. The paper also discusses various validity measures, which became useful in evaluating cluster quality. The paper discusses issues involved in Particle Swarm Optimization (PSO) and compares various variants of PSO that address the discussed issues. PSO can be applied to partition based clustering for improving performance and quality of resulting clusters. In that connection, the paper discusses about how PSO is useful to solve these issues in partition clustering. Moreover, the paper presents survey of partition clustering using PSO. This paper would become very useful to beginners and researchers in advancing the field of applying data clustering using PSO.

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Handling Mutual Exclusion in a Distributed Application through Zookeeper

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Abstract

Zookeeper a powerful, feasible approach to build distributed applications implementing open APIs that enables developers to apply their own powerful co-ordination primitives. The aim of this study is twofold i) To study the anatomy and life cycle of zookeeper and make use of as a role of high-performance coordination service for distributed applications ii) a case study was presented about Zookeeper implementations in the payment process where synchronization and coordination is not meet due to dual server implementation, where orders are placed through an e-store application. Finally the potentiality of Zookeeper replications is considered to address reliability and performance issues.

Combined Horizontal and Vertical Projection Feature Extraction Technique for Gurmukhi Handwritten Character Recognition

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Abstract

Despite the advancement in Optical Character Recognition (OCR) technologies, problem of Indic script character recognition remains challenging. Especially in case of handwritten characters the challenges are even more. In this work, we focus on recognition of handwritten characters of Gurmukhi, an Indic script commonly used in state of Punjab in India. As a part of this work we developed a Gurmukhi character dataset of 3500 images. This dataset is collected from 10 writers. We propose a combined horizontal and vertical projection feature extraction scheme for recognition of Gurmukhi characters. We have tested our method on this challenging dataset and achieved a high character recognition accuracy of 98.06%.

A Comparative Study on different approaches of Real Time Human Emotion Recognition based on Facial Expression Detection

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Abstract

Facial Expression Recognition lies in one of the crucial areas of research for human-computer interaction and human emotion identification. For a system to recognize a facial expression it needs to come across multiple variability of human face like color, texture, posture, expression, orientation and so on. The first step to recognize a facial expression of a person with various facial movements of the muscles beneath the eyes, nose and lips are to be detected and further classifying those features by comparing them with a set of trained data values using a good classifier for recognizing the emotion. In this paper a comparative study of the different approaches initiated for automatic real-time facial expression recognition is

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undertaken along with their benefits and flaws which will further help in developing and improving the system.

Texture Analysis of Various Images to Find Self-Similarities

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Abstract

Maximum bandwidth of the network is flooded with multimedia messages nowadays. Components of these messages are audio, video and images. Image is the basic unit of these multimedia messages. This paper analyzes textures of various types of images and finds self similarities within the image. Self similarities at various scales are discussed in the paper. These self similarities then form the basis for image compression with fractal approach.

A Comprehensive Review on Recent Advances in Variational Bayesian Inference

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Abstract

Variational Bayesian (VB) inference is the latest method for prediction of data or information in various processes. It provides a faster response with a reasonable accuracy as compared to the other methods (like Monte Carlo Markov Chain (MCMC) method). There is a large literature and work on prediction of data which deals with large amount of data. When data is missing, other methods, like MCMC, cannot be used as they require complete data for processing, while VB method provides the solution with missing data also with a very fast speed. Accuracy is the main limitation with VB method. Some algorithms are developed to overcome this limitation with some computational cost. SNVA, LSVB, SSVB and some others are the latest developed method which can be used to improve the accuracy.

A Survey and Taxonomy of various Packet Classification Algorithms

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Abstract

Routers can also function as firewalls and perform various operations on the incoming and outgoing packets. In case when all the packets share common header characteristics, it is termed as a packet flow. In order to classify a packet, routers perform a lookup on a classifier table using one or more fields from the packet header to classify the packet into its corresponding flow. A classifier is a set of rules which identify each flow and the appropriate actions to be taken for any packet belonging to that flow. The paper examines the problem of packet classification and various proposed techniques for the same.

A Malsburg Learning Back Propagation Combination for Handwritten Alpha Numeral Recognition

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Abstract

A combination of Malsburg Learning BP Network for handwritten alpha numeral identification has been designed and developed. The network combination has been used to train a set of standard data to recognize handwritten alpha numerals. With Holdout Method a separate labeled test data set has been used to measure the performance of the system in terms of accuracy, precision, recall and finally the f-score. The performance of the system is appreciable. The total time required for learning and performance evaluation is appreciably small, also the time taken to identify individual's alpha numerals is small. Thus the present handwritten alpha numerals identification system is efficient, effective and fast.

Comparison of Neural Network Back Propagation Algorithms for Early Detection of Sleep Disorders

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Abstract

Sleep is not merely a "BREAK" from our regular work. It is must to be physically and mentally refreshed every day. Having a sound night's sleep, one can perform best in whatever job in hand. But some time, sleep gets disturbed along with some awkward behaviors known as sleep disorders. The various techniques and practices are followed by numerous researchers for the diagnosis of the unusual behaviors which increase the disturbances in sleep and also encourage other sleep disorders. In this paper, a step has been taken towards the early detection of a few sleep disorders like Sleep Apnea, Insomnia, Parasomnia and Snoring using artificial neural network algorithms. The prior detection of these disorders can reduce the further effects on human body. This paper presents the comparison of four training algorithms gradient descent, quasi newton, conjugate gradient and bayesian regularization by using different training functions such as trainrp, trainlm, trainscg and trainbr respectively. All these algorithms are trained by the data set acquired from various physicians. From the results, it is found that bayesian regularization algorithm which is trained by using trainbr training function provides the best result for early detection of sleep disorders as per chosen sample size of 95 patient records.

Soft Computing Technique Based on ANFIS for the Early Detection of Sleep Disorders

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Abstract

Sleep is a great natural occurring state in which everything is forgotten for a while, become fresh and ready for next coming daily routine exercises. Any person can lag in these exercises, if their sleep is not well taken. But, sometime it is observed that the sleep gets disturbed due to some awkward behaviors known as sleep disorders. The various intelligent techniques/ methods are proposed for the diagnosis, detection and classification of sleep disorders, sleep spindles and other sleep related events. In this paper,

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a system is proposed based on physio-psycho symptoms by using an adaptive neuro-fuzzy inference system (ANFIS). The major concern is taken towards the early detection of only four sleep disorders that are Sleep Apnea, Insomnia, Parasomnia and Snoring. The prior detection of all these disorders are having a prime importance, as it can help a person to safe itself from the further effects that can arise from these sleep disorders. To implement the system, the data set is collected from various physicians comprising the record of 96 patients.

Analysis and Comparison of Web Application Firewall Tools

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Abstract

In today's scenario as the numbers of legitimate users are increasing, number of intruder's uses to target the web applications and the other authorized data. Web applications are becoming a popular and valuable target for security attacks. Although many techniques has been developing to fortify web application and attenuate the attacks towards web application. A web application is software that runs in the browser using hypertext transfer protocol (HTTP). In recent years, as the usage of web application vulnerabilities are increasing, web application firewalls introduced to protect private network from the unauthorized data. There are many commercial security assurance tools that claim to protect web applications from unauthorized data. In this survey paper, we have studied the vulnerabilities of web application firewalls and the challenges firewall faces while protecting a network from the intruders and the tools to revive web application information. This paper will elaborate number of attacks on different layers of OSI model. We have focused on application layer attacks like cross-site scripting (XSS), SQL injection, spam, data leakage.

A Flipped Voltage Follower Based Analog Multiplier in 90nm CMOS Process

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Abstract

An analog multiplier working in low voltage supply using Flipped Voltage Follower (FVF) has been analyzed in this paper. Four of such cells have been used for biasing and signaling. The Multiplier draws 178 W of power worst case from the 1V power supply. This architecture shows less than 1.5% total harmonic distortion in post-layout .This multiplier has been designed using 90nm CMOS technology with CADENCE Virtuoso and simulated in Spectre environment.

Approach to Perform Horizontal and Vertical Handoff in Wireless Network

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Abstract

Now a days we are going to face many problems during the handoff in various heterogeneous network and it increases day by day due to increase the number of mobile devices which is interface with the

network. In this scheme we are going to propose the seamless approach to perform vertical and horizontal handoff. This scheme will reduced the handoff latency, call dropping during the handoff process.

Algorithms for Clustering XML Documents: A Review

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Abstract

This paper provides a brief survey of various algorithms that are widely being used for the clustering of XML (Extensible Markup Language) documents. The scalable integration techniques and algorithms, like XClust algorithm, S-GRACE algorithm, XProj algorithm, XCleaner algorithm and many more, are being developed for the growing number of data sources of XML documents. These techniques have been used for reduction in many problems of clustering but still we can find the problem of clustering complexity which is being discussed here and the technique to overcome that is being thought to be taken up as the future work.

Formal Specification of Asynchronous Check-pointing using Event B

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Abstract

The major issue in distributed systems is the recovery from some short term failures. It is desired to have transparent scheme for recovery, from such failures, which is efficient as well. Checkpoint is the one of the scheme. Checkpoint-based protocols simply depend on checkpointing in order to get system state restoration. Generally, checkpointing may be categorised as synchronous, asynchronous or communication-induced. While, there is another mechanism, log-based, in which checkpointing also include logging of nondeterministic events. These events are encoded in tuples known as determinants. A formal reasoning is required to precisely understand the behaviour of such techniques and to understand how they achieve the objectives. Event-B is a formal technique which gives a framework for the distributed systems by mathematical models. We are presenting a formal development of asynchronous checkpointing using Event-B in this paper.

Comparative Study of Mamdani-Type and Sugeno-Type Fuzzy Inference Systems for Diagnosis of Diabetes

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Abstract

Fuzzy inference systems for diagnosis of diabetes are developed using Mamdani-type and Sugeno-type fuzzy models. The outcome obtained by two fuzzy inference systems is evaluated. This paper summarizes the essential variation among the Mamdani-type and Sugeno-type fuzzy inference systems. MATLAB fuzzy logic toolbox is used for the simulation of both the models. This also confirms which one is a superior choice of the two fuzzy inference systems for diagnosis of diabetes.

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An Efficient and Secure Means for Identity and Trust Management in Cloud

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Abstract

Cloud users are inevitably confronted with the potential risk of storing their crucial data into the remote data center of cloud service providers (CSP), which raises the concern among cloud users for their Identities and Trust for CSP's.So their arises the need for an efficient identity and trust management system, which can serve to both CSP and Cloud Consumer and hence necessary to increase the service level agreements (SLA) between them. This paper proposes a strong heterogeneous online and offline sign crypt model for a cloud network for the issue pertaining to identities and trust management. This model has certain merits: firstly, it set ups the secure, trustworthy connection between the cloud user and cloud data center, while maintaining the identities of the user and also it achieves confidentiality, authentication, and non-repudiation of services in a coherent single step. Secondly, it allows a cloud user in an Identity based cryptography (IBC) to send a request message to an internet host in public key infrastructure (PKI). Thirdly, it splits the generated sign crypt into two phases: a) Offline, and b) Online phase, and thereafter they are shown on several types of attacks. Our model is very suitable to provide high level of identity and trust management in cloud computing paradigm.

Overview of LP Trace-backing Using Packet Marking Techniques

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Abstract

This A network comprises of a plurality of nodes working together to perform similar or different tasks. The network has a huge room for attacks so as to make the network inefficient. The major attacks that are causing huge turbulences to the network and its equivalent resources include Denial of Service (DoS) attacks and Distributed Denial of Service (DDoS) attacks. In prior-art there are many techniques that can sense and avoid these attacks. Packet Marking (PM) techniques are the most widely used successful techniques towards avoiding these attacks. However, there are some critical issues with the PM techniques, as these attacks are becoming more complicated due to growing talent in the market. PM technique can be used further to traceback the origin of attacks. In this traceback the major contest is to minimize the amount of packets in successful traceback of these attacks. The packets that are originating from the sources are not enough to traceback the origin. The paper discusses various known PM techniques available for fighting back against the mentioned attacks. Further, the paper also discloses the implementation of these techniques, their advantages, disadvantages, complexity analysis, and the results measured. Future trends including the need for effective and efficient defense mechanism are also discussed.

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Modeling of Hierarchical Location Management Schemes to Locate Mobile Multi Agents using Colored Petri Net

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Abstract

Mobile Agent (MA) is software works on behalf of user with the ability to migrate from one host to another under its own control in the open network like internet. For some applications, group of mobile agents are launched in place of single MA, these MAs interact with each other to know the status of other MAs and to communicate with them. When a MA is launched, its discoverer has no control over the MA and doesn't know about its location until it comes back to the discoverer after completing its route. In order to communicate with MAs its location must be traced and an appropriate communication mechanism must be used. The major operating cost associated with location management is the large MA cost to search and update.

This paper presents a solution to locate MA in a global network for multi agent environment. Proposed solution divides the global network into regions and then combines search and update based techniques to locate MA. This paper identifies the various components of the proposed scheme and models them using Colored Petri Net (CPN) tool. Once the model is build, various tools offered by CPN are used to check the correctness of the modeled system.

Security for IoT: An effective DTLS with public certificates

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Abstract

The IoT (Internet of Things) is a scenario in which things, people, animal or any other object can be identified uniquely and have the ability to send or receive data over a network. With the IPV6 the address space has been increased enormously, favors allocation of IP address to a wide range of objects. In near future the number of things that would be connected to internet will be around 40 million. In this scenario it is expected that it will play a very vital role in business, data and social processes in which devices will interact among themselves and with the surrounding by interchanging information [5]. If this information carries sensitive data then security is an aspect that can never be ignored. This paper discusses some existing security mechanism for IoT and an effective DTLS mechanism that makes the DTLS security more robust by employing public certificates for authentication.

A Review on Outlier Detection Techniques on Data Streams by Using Different Approaches of K-Means Algorithm

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Abstract

Data Stream mining has gained attraction from more researcher as there is need to mine large dataset which poses different challenges to researcher. Stream data is different than normal data as they

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continuously produced from different applications which impose different challenges like massive, infinite, concept drift etc. for processing. An object that does not obey the behavior of normal data object is called as outliers. Outlier detection is used for fraud detection, intrusion detection, track environmental changes, medical diagnosis in different applications so there is need to detect outliers from data streams. There various approaches used for outlier detection. Some of them are uses K-Means algorithm for outlier detection in data streams which helps to create a similar group or cluster of data points. Data stream clustering techniques are highly helpful to cluster the similar data items in data streams and also to detect the outliers from them, so they are called cluster based outlier detection. K-means algorithm is partitioning based algorithm for clustering datasets into number of clusters. It is most common and popular algorithm for clustering due to its simplicity and efficiency. Purpose of this paper is to review different approaches of outlier detection used K-Means algorithm for clustering dataset with some other methods. After that outlier are detected from dataset. Different application areas of outlier detection are discussed in this paper.

A Novel Approach for Clustering Data Streams Using Granularity Technique

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Abstract

Data Stream mining has large scope due to their usage in vice variety of application and business purpose. It provides the meaning full usage information which use full to take decision and also for planning purpose. According to application needs on particular parameter consideration there will be change in clustering method use in a stream Data mining. The purpose behind survey paper is explore the widely use clustering method StreamKM++ beneficial over the different clustering method and resolve issues of traditional clustering. Also contain different clustering method like hierarchical, density base, Partitioning Method study, Parameter and their operational methodology. BIRCH is faster than StreamKM++ but output of it not efficient and same way compare it with StreamLS, which partitions input data stream into chunk and clustering each chunk base on local search. Outcome of that is quality comparable and StreamKM++ significant better scalable with number of cluster. Clustering method apply using 2-phase method. Setting the arrival rate of input stream Data using AIG, same way sets the memory for output using AOG, and setting processing to consume less resources using AIP. Using these methods, provide the better quality with respect to time clustering of stream data.

Rainfall Forecasting Using Neural Network: A Survey

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Abstract

An accurate rainfall forecasting is a challenging problem for agriculture dependent countries. It is important to determine the amount of rainfall for effective use of crop productivity, water resources, and preplanning of water resources. Statistical techniques for rainfall forecasting cannot perform well for long-term rainfall forecasting due to the dynamic nature of climate phenomena. Artificial Neural Networks (ANNs) have become very popular, and prediction using ANN is one of the most widely used techniques for rainfall forecasting. This paper provides a detailed survey and comparison of different neural network architectures used by researchers for rainfall forecasting. The paper also discusses the issues of applying different neural networks for monthly/daily/yearly rainfall forecasting. Moreover, it also presents different accuracy measures used by researchers.

Classification of ECG signals using Machine Learning Techniques: A Survey

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Abstract

Classification of electrocardiogram (ECG) signals plays an important role in diagnoses of heart diseases. An accurate ECG classification is a challenging problem. A survey of ECG classification into arrhythmia types is presented in this paper. Early and accurate detection of arrhythmia types is important in detecting heart diseases and finding treatment of a patient. Different classifiers are available for ECG classification. Amongst all classifiers, artificial neural networks have become very popular and most widely used for ECG classification. In this paper a detailed survey of preprocessing techniques, ECG databases, feature extraction techniques, classifiers and performance measures are presented. This paper also described issues in ECG classification, analysis of input beat selection, and output of classifiers.

Survey on Various Techniques of Tracking

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Abstract

This paper mainly focuses on different kinds of techniques for players tracking in various sports. As the number of videos in sports is increasing day by day, the need to analyze them for tracking players and identifying them also increasing. Tracking has many applications but this is a very arduous task. There are various techniques that are discovered from time to time to track the players and to make tracking more accurate. Problems in tracking arise due to occlusion, fast movement and many more. This paper gives a summary of a number of research papers that are dealing with tracking. In this paper, we reviewed numerous papers of tracking from year 2003 till year 2014.

An Improved Cluster Head Selection Based Energy Efficient Technique for Wireless Sensor Networks

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Abstract

In the development of various cluster based energy efficient protocols to improve the lifetime of wireless sensor networks, a challenging problem is how to adopt the most effective energy efficient cluster head selection approach. WSNs are composed of a large number of sensor nodes which have limited energy. The proposed algorithm considers the sensor nodes residual energy to select optimal cluster head for next round of cluster head selection algorithm. The algorithm guarantees the entire network stays alive for longer time than the other existing energy efficient techniques. Also the proposed protocol makes use of the virtual cluster head creation to achieve the desired goals for WSNs. The proposed technique thus improves the overall performance of wireless sensor networks in terms of increasing the lifetime of sensor nodes, reducing the bandwidth consumption and latency of WSNs. Also balancing energy distribution among all nodes of the network increases the round number at which the first node dies which reduces the energy holes in WSNs.NS2 simulation shows that the proposed energy efficient protocol provides better performance compared to LEACH and PR-LEACH protocol

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Generalization of Fuzzy Noiseless Source Coding With Utilities

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Abstract

In coding theory, we study various properties of codes for application in data compression, cryptography, error correction and network coding. The study of codes is introduced in information theory, electrical engineering, mathematics and computer sciences for the transmission of data through reliable and efficient methods. We have to consider how coding of messages can be done efficiently so that maximum number of messages can be sent over a noiseless channel in a given time. Thus, minimum value of mean codeword length subject to a given constraint on codeword lengths has to be founded. In this paper, average code word length is proposed. Corresponding to newly defined average code word length a relationship with a result of generalized fuzzy information measures is introduced. Some Noiseless coding theorems connected with fuzzy information measure are also analyzed.

Energy Aware Path Formation with Link Stability in Wireless Ad-hoc Network

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Abstract

In this paper proposed a novel energy aware routing algorithm for adhoc network, called Stability of path and residual energy Based (SHUB) protocol. SHUB is used two important requirement of adhoc network as energy aware approaches, link stability and path stability are used to prolong network lifetime. Link stability is calculated using link expiration time prediction algorithm and residual energy of node joined by the link in this article. Energy aware metrics, node cost in term of remaining energy. Energy consumed in transmission and receiving and the remaining energy considered in a single formulation, to find the energy formulation. This protocol is able to handle in large network size also. For comparison, evaluation of this proposed algorithm with two other existing proposed algorithms. In comparison protocol used is Dynamic Source Routing (DSR) and Link Ability and Energy aware Routing protocol (LAER). Simulation is done using NS-2 and result shows our protocol outperforms the existing routing protocol. Using this routing strategy prolong network lifetime and also save the battery capacity of node.

Analysis of Efficient Random Permutations generation for Security Applications

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Abstract

In this paper, random permutation generation algorithms namely Fisher Yates, its variant Sattolo and Josephus algorithm, both chaos and non-chaos based approaches are analyzed and compared. Their efficiency is tested against three criteria: ideally no fixed point, no adjacent pair, and shift factor greater than one third of degree of permutation. A random permutation algorithm should successfully satisfy the above criterion individually as well as when taken together. Chaotic maps are used for the generation of key-dependent and deterministic random behavior. Chaos based ones are attracting attentions as they produce less predictive permutations and a slight change in input parameters brings about a significant change in resultant outcome thereby making it suitable for security applications. The performance test is

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done on samples consisting of 10000, 50000 and 100000 permutations. In each sample, every individual permutation is having 50000 elements. The experimental results demonstrate that the chaos-based approach outperforms and generate more efficient random permutations.

Concepts Extraction for Medical Documents Using Ontology

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Abstract

In the biomedical domain, the large amount of text documents are unstructured information is available in digital text form. Text Mining is the method or technique to find for interesting and useful information from unstructured text. Text Mining is also important task in medical domain. The technique uses for Information retrieval, Information extraction and natural language processing (NLP). Traditional approaches for information retrieval are based on key based similarity. These approaches are used to overcome these problems; Semantic text mining is to discover the hidden information from unstructured text and making relationships of the terms occurring in them. In the biomedical text, the text should be in the form of text which can be presents in the books, articles, literature abstract, and so forth. Most of information stored in text format, so in this paper we focus on the role of ontology for semantic text mining by using wordNet. Specifically, we have presented a model for extracting concepts from text documents using linguistic ontology in the domain of medical.

Exhaustive Study of SDLC phases and their best practices to create CDP Model for Process Improvement

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Abstract

This paper reveals the study of sub methods of the phases of SDLC i.e. Software Development Life Cycle. Some methods or sub-practices are always required to execute each and every phase. There is always a need of some procedures, steps, methods and processesto build anything whether it is software or anything. Even a recipe needs a proper steps otherwise it will give a bad taste. An appropriate approach or accurate steps are to be followed always to construct a quality product. Various models, standards and processes have been introduced by ISO, CMMietc to follow a proper approach to reach the destination. There was a need to find a method which would be suitable for company/organization. As companies have to manage each and everything with the existing resources by keeping in mind the quality and goal of customer. This paper represents the exhaustive study of the sub-methods or sub-practices of SDLC phases as per the process areas of CMMi and a model which shows the best suited combinations of various methods to achieve the desired product as per the requirements and existing resources. This is was the part of process improvement of a software organization “Saber Corp(Made-Up)”. This whole paper represents the CDP model which was the output of process improvement process of company Saber Corp.

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Assessment of Feature Extraction Techniques for Hyperspectral Image Classification

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Abstract

Using image classification methods to produce thematic maps from hyperspectral data is a challenging image processing task. Feature extraction is an important preprocessing operation to reduce the dimensionality of hyperspectral while preserving most of the information. This research work investigates some of the widely used feature extraction techniques and provides and accuracy analysis by performing experiments on a real dataset. A comparative performance analysis of some of the most important techniques including principle component analysis (PCA), Decision Boundary Feature Extraction (DBFE), and discriminative analysis feature extraction (DAFE) is provided in this work. The classification is carried out using statistical and neural network classifiers. The experimental results shown that DBFE has yielded best accuracy classification among the investigated techniques.

A GA Based Job Scheduling Strategy for Computational Grid

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Abstract

To meet the ever increasing demand of computing capacity and to cater towards collaborative engineering grid systems have emerged as the effective solution. Scheduling on such systems play a very critical role to ensure that the available resources are assigned and used optimally. Scheduling on grid has been proven to be an NP hard problem owing to the heterogeneity of the participating resources, huge search space and dynamicity of the grid system. GA has gained popularity among the researchers for scheduling problems on the grid systems, being a part of the evolutionary computing based on Darwin's theory of survival of the fittest. The proposed work presents a design and eventual analysis of a scheduling strategy using GA that schedules the job with the objective of minimizing the turnaround time of the job. This is done ensuring the resource assignment as per the job's requirement while considering the precedence and communication cost constraints. The work explores the use of Roulette wheel and Rank selection method as the selection methods while varying other parameters to study the model under various conditions.

Effect of Optimal Cluster Head Placement in MANET through Multi Objective GA

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Abstract

Ad-hoc network refers to a wireless network comprising of non-stationary nodes, which autonomously collaborate between themselves for transmitting communication. Wireless sensor networks (WSN) are a subclass, where the nodes feature topological limitation in creating contact with the outside world. Replenishment of energy in WSN is usually not possible due to inhospitable environment. Accordingly, activity switching and clustering are two major approaches adopted for energy conservation and prolonging lifetime in MANETs. For large networks, soft computing has been repeatedly proven to achieve near to optimal solutions in routing and clustering problems. A genetic algorithm based approach towards

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efficient election of cluster heads has been proposed. The objective functions targeting optimal selection and placement of cluster centers has been derived. The problem is genetically encoded and standard multi-objective genetic algorithm is used for evaluation. Subsequent results and comparative discussion is provided.

Comparison of Image Compression Methods on Various Images

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Abstract

Compression mechanisms for image search redundancies in the image data. This redundancy may occur in neighboring pixel values or the pixels found anywhere in the image. Moreover the redundancies may be at pixel level or at block level. There are a number of image compression mechanisms available. The paper compares some of these image compression mechanisms along with some compression parameters and computation time taken for compression on various sample images.

PAPR Reduction Using Precoding and Companding Techniques for OFDM Systems

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Abstract

For multipath propagation systems OFDM provides good choice but also suffers with high peak to average power ratio (PAPR) at the transmitter side. High PAPR values results in non-linearites at transmission leading to complex designing. Therefore reduction of PAPR is necessary for lesser complexities, higher efficiency and greater stability. In this paper various PAPR reduction techniques have been developed. Different precoding matrices are used for PAPR reduction. Comparative analysis of μ-law companding and A-law companding techniques are also carried out to see the effect on PAPR values. Further studies are done by using various modulation techniques and varying no of subcarriers. Efficient reduction in PAPR values are obtained for applied techniques.

Mobility Management in Heterogeneous Wireless Networks based on IEEE 802.21 Framework

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Abstract

Wireless and mobile networks are evolving very rapidly. The mobile nodes in the wireless networks are having multiple interfaces with different radio access technologies (RATs) which are having different capabilities, cost and performance ratio. The use of non-PC based portable devices is increasing due to their flexible usage. The wireless and mobile network which is formed by these non-PC and PC based devices is heterogeneous in nature and these networks are co-located. Multiple interfaces can be included in the mobile device by using separate hardware and software modules. A mobile user wants to be Always

Best Connected (ABC) as per its various requirements and availability in a particular environment. When a mobile node leaves the current network and joins the other network, a handover operation is needed and performed. The Handover operation is used to achieve seamless mobility and is of two types, first is in between same RATs and second is in between different RATs. For seamless and smooth handover operations across heterogeneous networks, IEEE has published a standard, named as IEEE 802.21. This paper presents a comprehensive description on the issues and challenges for achieving the seamless mobility in a heterogeneous environment. Apart from this, we also present the description of services provided by IEEE 802.21 standard and related vertical handover schemes to realize seamless mobility in heterogeneous network.

A Study on the Growth of Agile Methods in India till 2014

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Abstract

In last decades, we had sequential and phased software development models like the Waterfall model, Spiral model etc., now today we have more iterative and incremental methods in form of Agile methods. The journey of agile methods has come across a long way in world's software community after their development in the year 2001. These methods have been given a new edge to the software development and new dimensions of software products. Agile methods are now almost at peak because of their use not only in the field of software development, but also in every other field. World's CMM level 5 companies are using Agile methods and some are now coming forward to adopt agile methods and principles. But in India these methods are still a big word for some large as well as small companies. This paper is an attempt to trace out the current status and growth of agile methods in India from 2001 to 2014 and of happenings in social media about agile methods.

CPFR: Coverage Preserving Failure Recovery in Wireless Sensor Networks

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Abstract

Since sensor nodes in wireless sensor networks (WSNs) are deployed randomly in hostile and ill-disposed environments, failures occur more frequently and unexpectedly as compared to other traditional networks. These frequent faults and failures in the network are major attributes towards poor quality of services (QoS). Therefore, for providing better QoS, such failures should be identified and recovered timely. On the other hand, wireless sensor nodes are resource constrained battery operated devices. Therefore, the failure diagnosis and recovery procedure should be energy efficient. In this work, we propose an energy efficient mechanism to diagnose and recover failures. At first, we propose a very low false alarming rate consensus based failure identification mechanism for diagnosing failures in the network. Secondly, an energy efficient coverage preserving failure recovery (CPFR) mechanism is proposed for recovering failures and maintaining an adequate coverage. The ns-2 based result shows that proposed scheme is able to diagnose failures with very low false alarming rate and is also able to recover failures by maintaining coverage above a threshold.

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An Enhanced Modulo-based Image EncryptionUsing Chaotic and Fractal Keys

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Abstract

In this paper, we propose an enhanced version of modulo-based image encryption suggested by Rozouvan. Rozouvan *et al.* employed a fractal image to generate strong keys for image pixels encryption. The proposed enhanced version conflates the merits of chaos theory along with the use of fractal keys thereby inherit the features of original algorithm. The security enhancements are proposed to provide better robustness and security to realize trustworthy image encryption. To achieve the purpose, chaotic map is incorporated to create image information dependency so as to thwart the attacks launched by Yoon *et al.* on Rozouzan algorithm. Arnold cat map is used to perform pixels shuffling before pixels encryption to complicate the attack complexity. The simulation results on standard analyses demonstrate its effectiveness in providing better security and robustness to digital media.

A Review on Steganography and Cryptography

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Abstract

Today's information world is a digital world. Data transmission over an unsecure channel is becoming a major issue of concern nowadays. And at the same time intruders are spreading over the internet and being very active. So to protect the secret data from theft some security measures need to be taken. In order to keep the data secret various techniques have been implemented to encrypt and decrypt the secret data, Cryptography and Steganography are the two most prominent techniques from them. But these two techniques alone can't do work as much efficiently as they do together. Steganography is a Greek word which is made up of two words Stegano and graphy. Stegano means hidden and graphy means writing i.e. Steganography means hidden writing. Steganography is a way to hide the fact that data communication is taking place. While cryptography converts the secret message in other than human readable form but this technique is having a limitation that the encrypted message is visible to everyone. In this way over the internet, intruders may try to apply heat and trial method to get the secret message. Steganography overcome the limitation of cryptography by hiding the fact that some transmission is taking place. In steganography the secret message is hidden in other than original media such as Text, Image, video and audio form. These two techniques are different and having their own significance. So in this paper we are going to discuss various cryptographic and steganographic techniques used in order the keep the message secret

Identification of Spatio-Temporal and Kinematics Parameters for 2-D Optical Gait Analysis System using Passive Markers

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Abstract

Quantification of human gait assist healthcare professionals to distinguish between normal and abnormal gait. Most gait capture systems use direct measurement techniques to acquire Spatio-temporal parameters and kinematics for motion information, but in that subject has to carry cables and other costly component. To overcome these limitations, this paper studies the feasibility of Spatio Temporal and

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Kinematics parameters by using passive marker based 2-D optical gait analysis system. The co-ordinates of markers were obtained by using a home setting arrangement consisting of a camera, 5 reflective passive markers and a personal computer. Algorithms were developed to analyze, Spatio-temporal and Kinematic gait parameters (cadence, step length, stride rate, gait cycle, joint angles and gait speed can be assessed. The main profit of the presented system are that it reduces the extra time and complexity required for marker placement, the high cost for the markers, and also the effect of the markers on the subject's movement. The prototype of the system provides decent quantitative Spatio Temporal and Kinematics gait parameters that can assisted for better understanding of Indian patients gait pathology, treatment and rehabilitation by Healthcare Professionals.

Content Based Image Retrieval A Comparative Based Analysis For Feature Extraction Approach

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Abstract

Content Based Image Retrieval (CBIR) is a significant and increasingly popular approach that helps in the retrieval of image data from a huge collection. Image representation based on certain features helps in retrieval process. Three important visual features of an image include Color, Texture and Histogram. Here image retrieval techniques used are color dominant, texture and histogram features. Using that technique, as a first step an image can be uniformly divided into coarse partitions. GLCM (Gray Level Co-occurrence Matrix) is used here for texture representation for image retrieval based. Although a precise definition of texture is untraceable, the notion of texture generally refers to the presence of a spatial pattern that has some properties of homogeneity. Color histogram is the most important color representation factor used in image processing. Color histogram yields better retrieval accuracy. Histogram finds out the number of pixels in gray level. After that we are applying Euclidean distance, Neural Network ,Targetsearch methods algorithm and K-means clustering algorithm for retrieval of images from the database and making a comparison based approach between them to see which method helps in fast retrieval of images in terms of distance and time.

Exigency Alert and Tracking System

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Abstract.

Now a day's people feel insecure due to increase in the crime rate and accidents. Technology can be used at a greater scale to reduce these and with this inspiration we are proposing a system that can provide instant help in a better and faster way. The most common applications we have are panic alarm/ danger alert, requiring user to take actions to keep themselves safe. Practitioners saw some value of information and evidence gathering functions but, had safety concerns relating to their use by domestic violence victims still living with the perpetrator. The proposed system is using GPS which will take the location of the user from Google map. The main concept would be sending a voice message and a message template to the selected contacts and emergency numbers when in danger. Enhancement from the earlier systems we are providing user tracking when he/she is in a position that he cannot alert others.

Assessment of VoIP E-Model over 802.11 Wireless Mesh Network

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Abstract

Supporting quality of service (QoS) in multimedia application like Voice over IP is a key requirement. Wireless Mesh Networking is envisioned as a solution for next networks generation and a key technology for supporting VoIP application. VoIP has become a killer application and is gradually being tested over emerging areas like Wireless mesh networks. There are various challenges for VoIP in WMN. This Paper discusses E-Model which is the most reliable method for evaluating quality of voice recommended by the International Telecommunication Union-Telecommunication. The paper assesses quality of voice in form of Mean Opinion Score and R-Score in Wireless Mesh Scenario. The Paper gives a review of various codecs used in voice transmission. This paper also analyzes affect of variation of number of mesh routers over transmission of voice signal in wireless mesh scenario.

Comparative Study of LEACH, LEACH-C and PEGASIS Routing Protocols for Wireless Sensor Network

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Abstract

Wireless Sensor Network is an emerging branch of latest technology that is growing and improving day by day. Network lifetime management of sensor network is highly prioritized in its advancement issues. Routing techniques decide the transmission path in network that is main cause of energy consumption. In this paper three routing protocols LEACH, LEACH-C and PEGASIS are studied and compared on the basis of different factors that have to be considered while choosing methodology for particular project of wireless sensor network.

A Survey on Defect and Noise Detection and Correction Algorithms in Image Sensors

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Abstract

This paper presents a survey on various novel defect and noise detection and correction algorithms used in CMOS image sensors. This class of sensors is extremely relevant in number of applications in the areas of gaming, security, medical, automotive, high-end camera market, etc. This survey outlines the algorithms and the hardware implementation of novel defect and noise detection and correction schemes to detect and correct defective pixels, and discusses their performance and advantages in terms of their applications. Experimental results on various images illustrate the capabilities of the studied approaches.

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Smart Intrusion Detection System for MANET

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Abstract

Mobile Ad hoc networks (MANET) are infrastructure less networks which consist of self organized & self configured multihop nodes. The topology of these networks change with time. The nodes in the network not only act as routers but also as hosts. Two main issues in MANET are challenging namely, optimized routing and security. The approach followed in this paper suggests use of data mining techniques such as clustering and classification in developing intrusion detection system for MANET. We will use Zone routing protocol (ZRP) for packet flow which is hybrid in nature. Then various properties of the malicious, selfish and loyal nodes are used to identify the cluster heads. Cluster head is one of the loyal nodes which are having sufficient energy to transmit the message in the mobile Ad hoc networks and also guarantees successful transmission of data from source to destination

Linear Array Synthesis using Schelkunoff Polynomial Method and Particle Swarm Optimization

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Abstract

Particle Swarm Optimization (PSO) Algorithm with the Schelkunoff polynomial method (SPM) is used to synthesize the linear array. The problem of interference suppression in antenna array is done by Schelkunoff polynomial method. After that the control of side lobe level (SLL) reduction of the array pattern is done by the PSO algorithm. It has been demonstrated that the complexity of the optimization problem is reduced by this technique. The simulated results shows proper null placement, reduction in SLL and beamforming capability.

A Survey on the impact of Economies of Scale on Scientific Communities

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Abstract

Cloud computing is commonly characterized as a sort of computing that depends on offering computing resources instead of having neighborhood servers or individual gadgets to handle applications. The resource suppliers give adaptable resources to the client. In this paper, we propose to discover it out whether the little or medium scale scientific communities can utilize the economies of scale as a part of the cloud for its advantages. In this paper, we propose a Public Cloud model for leasing the adaptable resources from any open cloud supplier to the little or medium scale research associations. On the premise of this Public Cloud model, we are actualizing a novel strategy to handle the heterogeneous scientific workload on the cloud. The two average workloads are contemplated in this paper: High Throughput Computing (HTC) and Many Task Computing (MTC). Our workload taking care of the system can spare the aggregate resource utilization in both these workloads viably. We are proposing a novel scheduling technique, “Non-preemptive Priority based round robin scheduling”, to handle the requests at cloud. At last, we can presume that our routines can advantage the scientific communities from the economies of scale in the cloud environment.

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Classifier-Based Text Simplification for Improved Machine Translation

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Abstract

Machine Translation is one of the research fields of Computational Linguistics. The objective of many MT Researchers is to develop an MT System that produce good quality and high accuracy output translations and which also covers maximum language pairs. As internet and Globalization is increasing day by day, we need a way that improves the quality of translation. For this reason, we have developed a Classifier based Text Simplification Model for English-Hindi Machine Translation Systems. We have used support vector machines and Naïve Bayes Classifier to develop this model. We have also evaluated the performance of these classifiers.

Performance Metrics of Web Crawler in Client-Server and MVC Architecture

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Abstract

With the advancement of Internet in today's scenario, the data or the information is growing large. With every second, information on internet is increasing much more frequently. Many search engines searches for the user query in a few seconds which are based on Client/Server but many takes too long to display result. The work has been done to improve the speed of the search engine. In this paper we have discussed the comparison between the two architectures that is Client/Server and Model View Controller. Both of them seem to be similar but they are topologically different. This also describes the implementation of web crawler in these architectures.

Classification Using Fuzzy Cognitive Maps & Fuzzy Inference System

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Abstract

Fuzzy classification is very necessary because it has the ability to use interpretable rules. It has got control over the limitations of crisp rule based classifiers. This paper mainly deals with classification on the basis of soft computing techniques fuzzy cognitive maps and fuzzy inference system on the lenses dataset. The results obtained with FIS shows 100% accuracy. Sometimes the data available for classification contain missing or ambiguous data so Neutrosophic logic is used for classification to deal with indeterminacy.

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Prevention of Shoulder Surfing Attack using Randomized Square Matrix Virtual Keyboard

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Abstract

Password authentication in public space or using public computer infrastructure often poses the problem of disclosure either through spywares like keyloggers installed on target machine or a malicious onlooker who observes while the victim enters the password. Virtual keyboards offer protection against keyloggers but fail to prevent shoulder surfing. Recent attempts have attempted to improvise these keyboards by dynamically loading and changing the layout to confuse the snooping miscreant. Some attempt to introduce graphical passwords which have to be drawn in a particular geometry to authenticate the user. But even then they are vulnerable to attacks like screenshot capture, are not easy to integrate with existing systems & services and have major usability issues like longer authentication time, complexity in understanding among others. PassBoard is a new approach to tackle this problem.

K-Means Clustering for Adaptive Wavelet Based Image Denoising

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Abstract

Clustering algorithms are used for systematic retrieval of data by organizing them into several clusters. K-Means is one such algorithm which partitions data into groups based on distance metric in an unsupervised way. Clustering is used to organize data for efficient retrieval. In this paper, we study Denoising of images corrupted with variable Gaussian noise spread across the images (dataset). The dataset was made by applying K-Means grouping statistical parameters of the training images which are present in wavelet domain. Adaptive Soft thresholding of noisy images is done, selecting the best parameter based on the cluster. After applying inverse wavelet transform PSNR of the denoised image is calculated. Impressive results are obtained by applying this technique.

Mitigation and Wavelet Analysis for Power Swing in IEEE 9 Bus System

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Abstract

Power oscillations occur in a transmission line due to various disturbances will affect distance relay behavior and may result in relay mal-operation. This paper presents new approach to damp out the power oscillation as early as possible by using power system stabilizer. Due to early damp out oscillations, no much variation is seen in the measured apparent impedance at relay location and it could not enter the relay tripping zone and prevent the distance relay mal-operation during power swing. To illustrate the

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effectiveness of the proposed scheme, the simulation was conducted on IEEE 9 bus system using PSCAD/EMTDC software. The results show the comparison between variation in load angle, speed and power swing with and without PSS when 3 phase fault is created in bus number 5 of IEEE 9 bus system. In addition to that multi-resolution based haar wavelet transform is used to decompose the analyzed signal into different frequency band and analysis the energy level in both cases. The technique includes decomposition and reconstruction of the faulted signal to extract the low – frequency component of the signals. With this new feature, make numerical relay more effective and more reliable in case of power swing.

Analysis of e-learning web application's alignment with six facets of understanding

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Abstract

E-learning web applications are a boon for the learners which provide the abundant knowledge at their doorsteps. This has wrecked the barriers between the mentor and the learner to make the educational system more interactive and effective. These portals not only focus on content delivery, but also concentrate towards the demonstration and continuous evaluation. Even though the effective delivery is an important quotient of any teaching learning process, the level of understanding among the learners are to be analyzed and evaluated concurrently. The alignment of e-learning portals with the understanding facets is the essential and challenging task. This paper focuses towards the analysis of web portal alignment with the understanding facets and the ways and means to analyze the alignment. The first part of this paper focuses on the advent of e-learning and the facets of understanding. The second part describes various parameters to analyze the alignment of e-learning web applications with the measurement procedure. The final part of this paper depicts the actual analysis and the results found.

Pragmatic Approach to implement self-checking mechanism in UVM based TestBench

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Abstract

Functional Verification of today's highly complex designs cannot rely simply on static verification techniques as these techniques are incapable of verifying modern complex digital designs. However, Simulation-based verification (SBV) which comes under dynamic verification approach can handle these complex systems. Among the various modern SBV approaches, Universal Verification Methodology (UVM) provides well established and flexible solution for complex system design verification. Flexibility of UVM lies in the fact that the verification environment developed using this consists of reusable components and supported by tools of all the three major vendors of the industry. UVM provides a complete framework to achieve coverage driven verification that includes Automatic test generation, Self-checking test bench and Coverage Metric. The self-checking capability provided by UVM is not very well defined and, hence, forces verification engineer to develop complex checking mechanism even for very small designs whereas, on the other hand, provides less resource for thorough checking of complex designs. In this paper, we will discuss implementation details of different kinds of checking mechanisms that can be used along with UVM based verification environment to improve its capability for functional checking, protocol checking and reaching hidden bugs of the DUV.

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Feature based classification of nuclear receptors and their subfamilies using fuzzy k-nearest neighbor

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Abstract

The efficient classification of nuclear receptors and their subfamilies plays an important role in the detection of various diseases such as diabetes, cancer, and inflammatory diseases and their related drug design and discovery. As of now, few methods have been reported in literature for the same but the performance and efficacy of these methods are not up to the desired level. To address the issue of efficient classification of nuclear receptor and their subfamilies, here in this paper we propose to use a fuzzy k-nearest neighbor classifier with minimum redundancy maximum relevance for the classification of nuclear receptor and their eight subfamilies. The minimum redundancy maximum relevance algorithm is used to select the optimal feature subset and observed that highest accuracy and Matthew's correlation coefficient is obtained with 400 features among 753 features through fuzzy kNN classifier. The performance of fuzzy kNN classifier depends on two parameter number of nearest neighbor (k) and fuzzy coefficient (m) and it is observed that the highest accuracy and MCC is obtained at k=7 and m= 1.25. The overall accuracies of 10 fold cross validation with optimal number of features, k and m are 98.09% and 97.85% and the MCC values of 0.97 and 0.90 for the prediction of nuclear receptor families and subfamilies respectively. From the obtained results and analysis it is observed that the performance of the proposed approach for the classification of nuclear receptor and their eight subfamilies is very competitive with some other standard methods available in literature.

Review on: Severity Estimation Unit of Automotive Accidents

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Abstract

During the last decades, there have been remarkable growth in the total number of vehicles around the world, and results in increase in traffic accidents rate. Several approaches have found in existing road safety vehicular system through the use of telecommunication technologies but, most of them is for improving traffic safety and focused on vehicle to vehicle communication. In this framework, an advanced communication technology is supported by intelligent Artificial Neural Network (ANN) system in order to provide accurate accident notification and severity estimation of the accident for better assistance in traffic accidents .This system reduce the response time to give alert about accident and hence will improve the overall rescue process after an accident takes place. It's an intelligent robust, cost effective system which is able to detect road accidents, notify them, and estimate their severity.

Gaussian Filter Threshold Modulation for Filtering Flat and Texture Area of an Image

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Abstract

In digital images, there are some regions that correspond to flat area and some others correspond to texture area. Different image processing need to be performed depending upon the type of region. This paper presents threshold modulation of Gaussian filter for flat and texture area filtering of an image.

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Standard deviation is used to differentiate between flat and texture area. In texture area, the Gaussian adaptive filter behaves as a Normal distribution filter and in flat area; the Gaussian adaptive filter behaves as an average filter. Experimental results on various test images illustrate the capabilities of Gaussian filter threshold modulation approach in efficient noise reduction.

Fingerprint feature extraction using morphological operations

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Abstract

Fingerprint extraction means to find the various minutiae points in a fingerprint to use it further for fingerprint matching. But if we use the fingerprint as it is for the feature extraction then we will get a lot of minutiae points among those many arises because of noise in fingerprint and thus can't be used for the matching of fingerprints. So we need a preprocessing technique to decrease the number of minutiae points and to get only those points that can be further used to match the fingerprint. According to experimentation results, we can decrease the number of fallacious minutiae points to a very large number by using preprocessing. In this research paper, we calculate the number of minutiae points by using three methods and then analyze the result. The comparison is between original Image and the two other preprocessed images one is obtained by using dilation operations and other is obtained by using hole filling and then dilation.

A Survey on Location Based Application Development for Android Platform

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Abstract

Android is currently the fastest growing mobile platform. One of the fastest growing areas in Android applications is Location Based Services. Location Based Service (LBS) is a platform that provides information services based on the current or a known location, supported by the Mobile positioning system. Presently, MOSDAC (Meteorological and Oceanographic Satellite Data Archival Centre) disseminates the weather forecast information through web. Android is one of the most widely used mobile OS these days and that is the reason why it is the best practice to develop application on Android platform. The application for disseminating location based weather forecast is a client-server application on Android platform. It provides weather forecast information as per user's location or location of interest. While developing a client-server application, the communication between client and database server becomes imperative. This paper discusses detailed analysis for choosing appropriate web service, data exchange protocols, data exchange format, and Mobile Positioning technologies for client-server application. This paper highlights issues like memory capacity, security, poor response time, and battery consumption in mobile devices. This paper is about exploring effective options to establish the dissemination service over smart phones with Android OS.

A Review of Scalable Data Sharing Techniquesfor Secure Cloud Storage

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Abstract

Cloud computing is a technology which supplies a shared pool of configurable IT resources such as network, software and database. Cloud Computing provides the facility of centralized data storage. User can access their data online. Cloud storage is very popular now-a-days. Data which is stored on clouds should be secure from adversaries. In cloud storage data sharing is an important functionality. Data transfer should be done securely and efficiently with others in cloud computing. In this paper we review different scalable data sharing techniques in cloud storage. To minimize the expense of managing and storing secret keys for general cryptographic use is aim of cryptographic key assignment schemes. For supporting flexible hierarchy in decryption power delegation, a encryption scheme is represented which is basically proposed for concisely transmitting large number of decryption keys in broadcast scenario .To protect data privacy is a central question for cloud storage. We illustrate new public-key encryption scheme, which produces constant-size cipher texts such as efficient delegation decryption rights for any set of cipher texts are possible.

Performance, Analysis and Comparison of Digital Adders

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Abstract

This paper primarily discusses the construction of different high speed adders using very high speed integrated circuit hardware design in the platform Modelsim 5.5c. The reason for this investigation is that adders are the most important circuits requiring improved designs in order to obtain maximum gain possible. In any digital system adders are the most fundamental unit. Addition is an indispensible operation in any Digital, Analog, or Control system. They are not only as arithmetic logic unit in computers and some processors but used in some other kind of processors too, where they are used to calculate addresses, table indices, and similar operations. Today technology in measured by its ability to measure computational algorithms. This paper discusses the drawbacks and gains of ripple carry, carry look ahead, carry select and kogges stone in terms of area, speed, delay. This paper focuses on implementation and simulation of 64 bit full adder using very high speed integrated circuit hardware description language (VHDL).

Developing 3D-Playfair Cipher Algorithm Using Structure Rotation

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Abstract

3D-Playfair cipher is the multiple letter encryption cipher. Trigraphs (combination of 3 characters) of the plaintext are treated as single units and converted into corresponding cipher text trigraphs and vice-versa. Classical Playfair Cipher supports English alphabets with limitation that only one alphabet “i” or “j” will be considered at a time. 3D-Playfair Cipher came into focus to eliminate this limitation. In addition to that 3D-

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Playfair Cipher also overlooks the limitation of similar fashion encryption of diagrams and its reverse diagrams. 3D-Playfair cipher supports all 26 English alphabets {A-Z}, 10 digits {0-9} and 28 special characters including {! " * # $ % & ' + , - . / : ; ( ) < = > ? @ [ ] \ ^ _ |}. The theme of this research is to enhance the security of text files that contains alphabets, numerals and special characters. In this approach we developed a structure rotation concept on key matrix of 3D-Playfair cipher using random key to achieve objective. Random sequences are generated through Linear Feedback Shift Register due to its simplicity and better performance.

RF Analysis of MEMS Shunt Capacitive Switch with Gold and Aluminium Beam

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Abstract

This paper deals with the Radio-Frequency analysis of asymmetric RF MEMS Shunt Capacitive Switch with the use of different materials as beam layer in RF MEMS switch. RF MEMS switches must have the characteristic of high isolation, low insertion loss, low pull in voltage with high down state to up state capacitance ratio. The model of capacitance is developed for the RF MEMS switch when the beam layer is not completely touching the signal line. This paper shows the radio frequency analysis and DC analysis in RF MEMS switch and found that Gold has pull in voltage of 13.8 Volts and capacitance ratio is 88.3, is more advantageous in high isolation and low insertion loss and aluminum has pull in voltage of 11.4 Volts and capacitance ratio is 82.4 which shows that latter is more desirable, when required lower pull in voltage in design. It has also been found that the insertion and isolation loss in gold as beam layer is 1.42 dB and 40.4 dB while the loss for aluminum as beam layer is 1.19dB and 36.1 dB at 40 GHz.

EEG based Stress Recognition System based on Indian Classical Music

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Abstract

Emotion and stress plays a significant role in day to day life. Stress arise many complicated medical situation. The aim of this study is to create a new fusion of EEG signals for emotional stress recognition and North Indian Classical Music. In this paper, proposed a method which extracts the EEG signals with the help of scalp of the brain in responding to various stimuli, and recognize the basic emotion like Happy, anger, sad and fear. The EEG signal feature is extracted by using the method of Kernel Density Estimation and emotions can be recognized by using the Multilayer Perceptron. This method visualizes the stress perception during the listening of Raga and neural network classifiers obtained an accuracy of emotion on the flow of valence of arousal model.

Ranking Web Pages Based on User Interaction Time Subtitle as needed

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Abstract

Web mining is a technique through which various analyses can be done so that it can be used for a variety of applications such as page ranking. Page ranking denotes the popularity or usage of web pages over internet. Although there are various page ranking algorithms implemented, but HITS and Google Page ranking are the most popular raking algorithms. This technique provides efficient ranking of web pages and provides less computational time, but here in this paper the algorithm is enhanced on the basis of response time of each web page. The idea is to compute access time of each web page and then compute average response time on the basis of which ranking of web pages can be predicted. The technique implemented here provides efficient page ranking as well as provides better goodness factor

Comprehensive set of Mutation Operators for the determination of adequacy of Test Set

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Abstract

A mutation system possesses the extensive theoretical components called mutation operators that are designed to evaluate the effectiveness of fault detection. Mutation testing of a software system rely extremely on the kinds of faults detected that the mutation operators are designed to represent. Therefore, the quality of the mutation operators is very significant to mutation testing. The interaction mutation provides criteria for the determination of the adequacy of tests generated for the software system. It helps in determining whether the test cases that have been created effectively detect all the possible faults in the software with sufficient mutation operators. The types of faults that the mutation operators are designed to represent plays a key role in determining the effectiveness of a test case. Therefore, the mutation testing heavily relies on the quality of the mutation operators. This work targets this issue by providing a set of additional mutation operators for creating mutants of the source code of few modules of an existing software system.

Fast Scale Invariant Multi-view Face Detection from Color Images using Skin Color Segmentation & trained Cascaded Face Detectors

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Abstract

Face detection is important step in face recognition, expression analysis, security, surveillance which has challenges due to multiple scales, views, rotations of faces & false background objects. Skin color segmentation, connected component extraction & correlation analysis on image is done to reduce search space & to improve detection rate. Cascaded face detectors are trained using Viola & Jone's Adaboost based Machine learning algorithm for each possible range of views & possible rotations. Segmented regions of 16*16 sizes are given to Cascaded face detectors to verify the presence of face. Experimental

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results show that it has very good detection rate for frontal & remarkable rate non-frontal, multi-view faces with negligible time duration in poor background/weather/lighting conditions.

Enhancement of Gain, Bandwidth and Directivity of a Patch Antenna by Increasing Dielectric Layers of the Substrate through Micromachining Technique for RFID Application

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Abstract

Bandwidth is the primary resource of any communication system, as the radio spectrum is fixed. The high gain and directivity is also the major issue for a wireless network. Microstrip antenna has popular attractive features such as low profile, low cost, small size and easily integrated with RF devices; but has narrow bandwidth and low gain. This paper comprises one novel technique in order to increase the bandwidth, gain and directivity of the conventional rectangular patch antenna. In this paper gain, directivity and bandwidth of a conventional patch antenna is enhanced by increasing dielectric layer between the patch and ground through silicon micromachining technique. In Radio Frequency Identification (RFID) technology, these types of antenna provide superior performance and all the simulation has been carried out in high frequency structure simulator (HFSS).

Fuzzy Logic Based Image Encryption For Confidential Data Transfer Using (2,2) Secret Sharing Scheme-Review

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Abstract

This paper introduces the fuzzy logic based image encryption for confidential data transfer using (2,2) secret sharing scheme. Fuzzy means vague, uncertain, ambiguous. It makes encryption and decryption method difficult to guess hence fuzzy logic using secret sharing concept is finer and enhanced way of image encryption and data is more secure. Visual Cryptography is a special encryption technique to hide information in images in such a way that it can be decrypted by the human vision. The (2,2) secret sharing scheme provides secured authentication. In secret sharing, random looking shares when brought together recreate the secret. As (2,2) divides the secret information into two shares

Design and Simulation of a Half Adder Circuit with DNA Logic Gates

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Abstract

The DNA molecule is indubitably the most powerful medium known for data storage and processing. But till now, DNA molecule has found little use in computing applications. For initiating computing application with DNA molecule, it requires to design DNA transistors which can be utilized to design basic gates to

implement Boolean logic. Interestingly some recent researches have shown that it's very much possible to design a three terminal transistor like device architecture by controlling the flow of RNA polymerase along DNA with specific integrates. Along with that, very recently, fundamental experimental designs for realizing various basic Boolean logic functions have been demonstrated successfully with DNA molecule. Present work adopted, modified and extended such DNA logic gate concept to execute design simulation of a half adder circuit. The timing diagram for sum, carry, input and output has been simulated and results have been presented. With present research, it has been established that such DNA logic gate concept can be extended to complex circuits. At the same time, it has been also predicted that with the development of proper mathematical model for DNA transistor, a circuit simulator can be designed for designing and simulating bioelectronics circuit in near future.

Development of a Morph Analyzer for Nepali Noun Token

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Abstract

Morphological Analysis provides grammatical information of a word from its suffix. Morphological (Morph) Analyser is a tool for the said purpose. It is an integral part of a successful Natural Language Processing (NLP) system. This paper discusses a suffixal Morph Analyzer for Nepali Nouns (MANN). This suffixal analyser is based on finite state grammar approach. The suffixal noun morphology of Nepali is well studied, and can be captured in regular grammar through finite state automata. Based on the linguistic rules, MANN identifies noun tokens and tags, their grammatical labels, and generates separate resources like Lexicon. Based on this a tool is developed and is working perfectly with Nepali nouns.

Non-recursive In order Traversal on Constructed Threaded K-D Tree for Efficient Cloud Based Space Partitioning

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Abstract

Cloud computing system comprises of a set of cloud nodes scattered over a large geographical surface. These cloud nodes usually helps to handle efficiently a new arrived job in cloud system. Now a day's researchers used to work for logically partitioning the earth surface such that every partition contains at least one cloud node which will be prime dedicated for handling jobs arrived in that partition. This phenomenon of partitioning the cloud system is called as 'Cloud Division Rule'. Using spatial data structure we have recursively broken down the earth surface in small zone, namely cloud cluster, containing single cloud node. For getting nodes' information (like load status, network bandwidth etc.) from the master cloud node traversing all the child cloud node is one of the way. Traversal of each cloud node is recursively performed in order to provide some services to users' request in considered cloud system. As millions of cloud nodes over the earth surface are to be clustered and recursively traversed, soa huge number of stack space and stack operations are internally initiated. To optimize these operations we have constructed a threaded k-d tree and do non-recursive inorder traversal over it. This novel approach makes the searching of ancestor and descendant cloud nodes from the current cloud node very easy and also optimizes the computation time and internal memory space of the computation unit which is one of the prime aspect for today's cloud computing Infrastructure as a Service (IaaS).

Finding Experts in Community Question Answering Services: A Theme based Query Likelihood Language Approach

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Abstract

Community question answering services provide an open platform for users to acquire and share their knowledge. In the last decade, popularity of such services has increased noticeably. Large number of unanswered questions is a major problem in such services. A common way to address this issue is to route a new question to some selected users who have proficiency to answer the question. Expert finding is the process of selecting such potential answerers. In this article, we have introduced an efficient method for expert finding using the theme in query likelihood language (QLL) model. Theme of a query is nothing but its subject matter and it is decided based on the parts of speech (POS) of the words in the query. Depending on the theme of the given question, its similarity to a question in the archive is determined using the QLL model. Aggregating the similarity values of the questions a user answered previously (i.e., in the archive), his/her expertise for the given question is obtained. The performance of the proposed method is verified on a real world dataset (obtained from Yahoo! Answers) and it is found to be quite encouraging.

Traffic and Congestion free Routing for Mobile Robots

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Abstract

Small group of robots are being used at different places to gather information. The proclivity for the usage of a team of robots in order to gather information is likely to increase in the upcoming future. The efficient and lossless communication becomes vital for these robots. In our research paper we propose an algorithm that focuses on minimizing congestion and data losses amongst a team of robots. Our algorithm prevents congestion beforehand and can be divided into two parts. A detailed description of these parts has been given in the paper. The algorithm was also tested on various grounds. These results have been discussed in the paper. The algorithm focuses on labelling each node depending on its congestion status and discovering an alternate path having a lower congestion status as soon as the path becomes liable to come in the congested zone.

PAPR Improvement in Cognitive Radio using Interleaved SC-FDMA

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Abstract

Cognitive Radio has emerged as a promising solution to the spectral congestion problem so as to enable the opportunistic users to share the unoccupied portions of licensed frequency bands. For the purpose of spectrum pooling, OFDMA based multi-carrier techniques such as NC-OFDM offers a good choice due to flexibility in deactivating the subcarriers occupied by primary licensed users to avoid interference, but

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suffer from high PAPR, not desirable particularly at the user equipment (UE) end. Single Carrier FDMA with localized and interleaved mapping gives lower PAPR at the UE end in the uplink. While Interleaved SC-FDMA has least PAPR along with higher frequency diversity, it requires the free subcarriers to be in a certain pattern, i.e. equi-spaced which is not guaranteed in spectrum pooling due to the fact that the total number of free subcarriers and their locations might change continuously in a dynamic spectrum access network. In this paper, we propose a spectrum allocation algorithm that gives an optimum DFT size and the bandwidth spreading factor to decide the number of users that can be allocated depending on specified required spectral efficiency so that the UE can employ Interleaved SC-FDMA to improve PAPR performance at its transmitter. The simulation results show that the algorithm aims to find an optimum DFT size that balances the required spectral efficiency with significantly reduced PAPR at the UE end as compared to NC-OFDMA and localized SC-FDMA.

Comparative Analysis of Two Different Ant Colony Algorithm for Model of TSP

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Abstract

Ant Colony Optimization is heuristic Algorithm which is an advance technique applied on number of optimization problems. In the research we study two different kinds of Ant Colony algorithms named as Ant System and the improved version of Ant system known as Max-Min Ant System performed in MATLAB to solve travelling Salesman Problem and their respective results are shown by using graphical implementation. In this paper both systems are analyzed by solving the same example of TSP and depict which system solve the problem efficiently with respect to cost and time.

Comparative Analysis of Location and Zone Based Routing in VANET with IEEE802.11p in City Scenario

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Abstract

Vehicular ad hoc network (VANET) is a an emerging category of mobile ad hoc networks (MANET) in which vehicles communicate with each other and road side infrastructure. Because of constraint road patterns and very high speed of vehicles, routing is a challenge in VANET. Most of the authors analyzed the performance of topology based routing protocols. This paper analyzed the performance of location aided routing (LAR) and zone routing protocol (ZRP) geographical protocols for city environment. Real time traces of vehicular movements are generated using a traffic simulator-VanetMobiSim with intelligent driver model (IDM). Packet delivery ratio (pdr), throughput, average delay, normalized routing load (nrl) and lost packet ratio (lpr) metrics are used to evaluate the performance of LAR and ZRP using ns2 along with IEEE802.11p. The analysis of results is performed using AWK programming script.

Low power designing in VLSI chips

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Abstract

Reducing power consumption is an indispensible subject in today's world. In today's scenario, reducing power consumption is the key challenge. The increasing need and usage of portable devices such as cell phones, laptops etc and the need to decrease power usage and power loss has led to an inclination

towards development of new techniques to curb this problem. This paper discusses all the causes of power dissipation in VLSI chips, and reviews all the strategies and methodologies that can be applied for low power designing. A comparison between the 4004 processor and the core i7 processor has also been drawn to throw light on the practical need for low power designing and where it has led us as of now.

Neural Network Based Group Authentication Using (N,N) Secret Sharing Scheme

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Abstract

In recent days, usage of internet is increasing so; authentication becomes the most important security services for communication purpose. Keeping this into consideration, there is need of robust security services and schemes. Group Authentication authenticates all users belonging to the same group is proposed in this paper. The (n, n) Group Authentication Scheme is very efficient since it is sufficient to authenticate all users at once if all users are group members; however, if there are nonmembers, it can be used as a preprocess before applying conventional user authentication to identify non-members. Also, if any of the user present in group authentication is absent then the group is not authenticated at all, as each share is distributed to each user. It results in best authenticated system as the Group Authentication is implemented with Neural Network. So it becomes complicated for hackers to hack each neuron in a neural network. The Neural Network based group authentication is specially designed for group-oriented applications using Shamir Secret Sharing Scheme.

Bank Note Authentication Using Decision Tree rules and Machine Learning Techniques

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Abstract

Banknotes are currencies used by any nation to carry-out financial activities and are every countries asset which every nation wants it (bank-note) to be genuine. Lot of miscreants induces fake notes into the market which resemble exactly the original note. Hence, there is a need for an efficient authentication system which predicts accurately whether the given note is genuine or not. Exhaustive experiments have been conducted using different machine learning techniques and found that Decision tree and MLP techniques are effective for banknote authentication which efficiently classifies a given banknote data. The rules given by Decision Tree are also tested and found that they are accurate enough to be used for prediction.

Ensuring Privacy in Opportunistic Networks Using Dynamic Clustering

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Abstract

Opportunistic networks are type of challenged mobile Ad-Hoc Networks (MANETs). In Opportunistic Networks (OppNets), mobile devices send out the messages by exploiting the unswerving contacts, without the requisite of an end-to-end communications. In such a system, nodes are sporadic and there does not subsist an ample path from source to destination customarily. The message forwarding in such a

network is a strenuous problem and is based on the hypothesis that users are willing to forward messages to each other but this assumption does not hold true always due to privacy as user's location may be leaked. To boot, the path can also be exceedingly unstable and may vary or shatter swiftly. So in line to craft communication doable in an opportunistic network, the intermediate nodes may take incarceration of data during the collapse and redirect it when the connectivity resumes.

Split-range Control of a Jacketed CSTR using Self-tuning Fuzzy PI Controller

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Abstract

CSTR is a highly non-linear process and the non-linear behavior of such processes requires other methods than conventional control. This paper addresses a novel application of Self-tuning Fuzzy PI Controller (STFPIC) to a Split-range Control strategy for circulation of cold fluid or hot fluid through Jacketed Continuous Stirred Tank Reactor (CSTR) in cascade control mode. In the primary loop STFPIC was used while in the secondary loop conventional proportional controller was implemented. Self-tuning mechanism of fuzzy PI controller is implemented with the help of a gain multiplier whose value is updated based on the instant error and rate of change of error. Grey Wolf Optimizer is used for tuning of primary as well as secondary controller gains in order to reduce Integral of Absolute Error (IAE). The overall approach has been simulated in Lab VIEW™ environment and a comparative study of STFPIC with conventional PID controller has been presented in this paper. Based on the intensive simulation studies it is found that the STFPIC outperformed PID for set point tracking by 62.5% and for disturbance rejection by 63.4%, in terms of IAE.

PID and Fuzzy logic controllers for controlling camera's position in Unmanned Aerial Vehicles

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Abstract

This paper describes two controllers Proportional Integral Derivative and Fuzzy Logic for adjusting position of camera in a Unmanned Aerial Vehicle. The PID controller is implemented and first simulated by using Simulink in MATLAB and the results are displayed graphically, also fuzzy logic controller is designed and simulated by using MATLAB. The aim of this paper is to compare the two controllers to obtain the preferred performance and alteration in position of camera in both roll and pitch.

LTE Interfaces and Protocols

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Abstract

LTE is an all IP Network, has a flat architecture, and thus reduces complexity. Each of the radio and core elements present in the network are interconnected by standardized interfaces so that there is interoperability between different vendor products. So the network operators can choose network elements form same or different vendors. Gn interface which was being used in UMTS for the connectivity of SGSN and GGSN will be used in the initial stage of LTE between SGSN and P-GW but this interface will finally get replaced by S3 and S4 interfaces after the software up-gradation of SGSN. Gn, S3 and S4

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interfaces use the different versions of the same application protocol i.e. GPRS Tunneling Protocol (GTP). Some of these interfaces and protocols that are being used in LTE are mentioned in this paper.

Stiction Combating Intelligent Controller Tuning : A Comparative Study

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Abstract

This paper investigates the effects of different controller tuning approaches on an intelligent controller, namely Stiction Combating Intelligent Controller (SCIC) earlier developed by the authors. The SCIC controller is inherently a variable gain fuzzy Proportional-Integral (PI) controller based on Takagi-Sugeno model and was specifically designed to handle the stiction nonlinearity in a control loop in presence of a sticky pneumatic control valve. Three different tuning methods, viz. Ziegler-Nichols, Tyreus-Luyben and Direct synthesis (DS) tuning approach, which are extensively employed in process industries to tune Proportional-Integral-Derivative controllers, are tested in this work to find the gains of SCIC and PI controller. The performance of both, SCIC and PI controllers, are rigorously evaluated experimentally on a laboratory scale nonlinear flow process for set point tracking, disturbance rejection, and robustness testing. Based on extensive experimental analysis it can be concluded that the SCIC controller tuned using DS approach performed best for almost all cases.

AI based MPPT Methods for Grid Connected PV Systems under non linear changing Solar Irradiation

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Abstract

This paper presents the artificial neural network (ANN), fuzzy logic controller (FLC) maximum power tracking (MPPT) methods in grid connected photovoltaic (PV) systems for optimizing the solar energy efficiency. All the methods are simulated in MATLAB-Simulink, respectively together with PV module of SunPower-SPR305 module connected to single-ended primary inductor converter (SPEIC). Performance assessment covers efficiency, overshoot, settling time response, oscillations and stability.

An Algorithm to Detect Malicious Nodes in Wireless Sensor Network using Enhanced LEACH protocol

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Abstract

Wireless sensor network comprises of small sensor nodes with limited resources. Typical applications of sensor network are Weather monitoring, Civil Applications, Battle field monitoring, Intrusion Detection etc. These sensor networks have limitations of system resources like battery power, communication range and processing capability. Low processing power and wireless connectivity make such networks vulnerable to various types of network attacks. Sensor network uses Low Energy Adaptive Clustering Hierarchy (LEACH), which is a TDMA based MAC protocol that balances the clustering energy, hence the network lifetime is prolonged. As the Cluster-heads are selected randomly so there are some disadvantages regarding LEACH protocol such as if once the CH dies the whole network fails. Hence we

propose a new approach in cluster-head selection. In our approach, a modified cluster-head selection algorithm has been proposed based on remaining battery life and distance and detection of malicious nodes in an effective way so that no attack can ruin the normal network operation.

Deployment of Secure Sharing: Authenticity and Authorization using Cryptography in Cloud Environment

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Abstract

Cloud computing is a cost-effective, scalable and flexible model of providing network services to a range of users including individual and business over the Internet. It has brought the revolution in the era of traditional method of storing and sharing of resources. It provides a variety of benefits to its users such as effective and efficient use of dynamically allocated shared resources, economics of scale, availability of resources etc. On the other part, cloud computing presents level of security risks because essential services are often controlled and handled by third party who makes it difficult to maintain data security and privacy and support data and service availability. Since cloud is a collection of machines called servers and all users' data stored on these machines, it emerges the security issues of confidentiality, integrity and availability. Authentication and authorization for data access on cloud is more than a necessity. Our work attempts to overcome these security challenges. The proposed methodology provides more control of owner on the data stored on cloud by restricting the access to specific user for specific file with limited privileges and for limited time period on the basis of secret key using symmetric as well as asymmetric mechanism. The integrity and confidentiality of data is ensured doubly by not only encrypting the secret key but also to the access permission and limited file information.

Test Script Execution and Effective Result Analysis in Hybrid Test Automation Framework

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Abstract

In today´s fast moving world, it is a challenge to continuously maintain, improve the quality and efficiency of software systems development. In many software projects, testing is neglected because of time or cost constraint which leads to lack of product quality. Test automation reduces the future maintenance efforts and cost significantly. Automated test suite can run fast and frequently, which is cost-effective for software products with a long maintenance life. It also increases the test coverage with very low cost. The Main objective of the paper is to find out the process for test script design and execution as well as failure analysis of the scripts. In these paper types of failures has been defined as per the defined hybrid framework. Quality of test cases is determined by their ability to uncover as many errors as possible in the web application. After execution, for fail test scripts our method can find out whether the failure is a valid issue or a false positive. There are many types of failures which come under false positive.

Energy Based Proficiency Analysis of Ad-hoc Routing Protocols in Wireless Sensor Networks

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Abstract

In a densely deployed sensor node network, each sensor nodes sense data and transmit it to a particular sink through multi-hop communications. Sensor nodes deployed nearby the sink node need to convey some extra data and control packets and therefore undergo much quicker energy depletion rates and so they have considerably smaller lifespan. This may discontinue network from functioning for a long time. Herein, we have analyzed the lifetime of sensor networks by using AODV, DSR, DYMO and ZRP protocol under different node density. Network Lifetime, throughput, energy consumption analysis, Average end to end delay, work efficiency, packet delivery ratio and packet latency (jitter) of each protocol has been demonstrated. The research of the usefulness of some prevailing methodologies towards lifespan estimation of sensor network has been carried out and simulation results are used to confirm the analysis. Behavior of protocols is observed under different energy models like generic, mica-motes and micaz. ZRP protocol consumes maximum energy under generic model and least energy under Micaz model. Average energy consumption is highest for generic model. For small number of nodes jitter of DYMO is more while for large number of nodes ZRP produces maximum jitter. DYMO produces maximum end to end delay while AODV produces minimum delay. Micaz model give maximum lifetime to a network. Energy consumption in transmission and receiving is highest for generic model. Throughput, work efficiency and packet delivery ratio is highest for DSR protocol.

Section Based Hybrid Routing Protocol for WSN using Artificial Bee Colony Concept

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Abstract

A wireless sensor network is a network that consists of large number of sensors and a base station. There are many novel architectures, algorithms, protocols implemented so far. One of the major issues in wireless sensor network is to develop an energy efficient routing protocol which affects the stability and overall lifetime of the sensor network. Clustering of sensor nodes is an effective technique used to improve energy, scalability and lifetime. The proposed protocol is a Section Based Hybrid Routing Protocol for heterogeneous WSN using Artificial Bee Colony. There are some nodes which send data directly to base station and some uses clustering technique to transmit data to base station (BS). This minimizes the energy consumption of sensors and increases the network lifetime and also the throughput of the network.

Tree Based Energy Efficient Routing Scheme for Body Area Network

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Abstract

Evolution of technology and day by day advancements in telecommunication, wireless communication, wireless sensors, and other technologies has led to development of such miniaturized sensors which can be implanted in or on the human body. This innovative and exhilarating area of research is Wireless Body

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Area Network (WBAN). Low power consumption and reliable data transmission is primary requirement in medical systems using WBAN. In this paper, we firstly explore efficient routing algorithm for WBAN and then it is modified to add energy factor with respect to routing gradient, energy aware expected transmission. In, this paper, Energy Efficient Tree Routing (EETR) algorithm is proposed for WBAN and it is compared with Ad-hoc On Demand Distance Vector Routing (AODVR) algorithm. This algorithm can jointly address the issue of low-power consumption and end-to end delay for reliable data transmission by modifying current algorithm so that nodes can robustly choose routing paths by minimizing the power levels for transmission. Considerable experiments are conducted using OMNET++ 4.5 as environment to ensure the successful implementation of proposed EETR algorithm by measuring number of factors like power consumption and Packet Reception Ratio (PRR).Experimental result analysis shows that EETR algorithm is beneficial than AODVR algorithm for energy efficient health monitoring using WBANs. In particular, single hop star topology and tree based multi-hop tree topology is compared with the help of extensive experiments conducted.

A Detection Technique for Identity Based Attacks In Clustered Mobile Ad-hoc Networks

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Abstract

Decentralized networks such as mobile ad-hoc networks (MANETs) are susceptible to many types of security attacks. Ideally, each node in MANETs should be associated with only one identity, but such networks are not equipped with a mechanism that can check whether one physical device is bound to exactly one identity or more. As a consequence, a malicious node can easily obtain more than one identity and behave as many independent nodes in the network. Such an attack comes under the category of identity based attacks and has a potential to disrupt the normal functioning of the network in many ways. In this paper, a detection mechanism has been proposed to find out the attacker which fools the other nodes in the network by using more than one identity at a time. The detection approach is based on the fact that all the illegitimately acquired identities of an attacker travel together on a single physical device.

Transforming Captured Images in 3D model

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Abstract

This paper comprises of the 3D model reconstruction from multiple images. It is the reverse process of capturing real life 3D object images with the help of camera, storing it as 2D images. Then again converting it to user friendly 3d mode. The essence of this paper is a projection from a 3D real time captured image into a 2D plane, during which the depth information The 3D point which is constrained to be on the line of sight to a specific image point is observed to be difficult to determine from a single image. This point corresponds to the image point is hence taken from more than two images. Here we are using three images for further proceeding. The intersection of three projection rays is considered as the position of a 3D point. This will give the information of set points which encloses a structure. This structure is related to the poses and calibration of the camera.

ICI Cancellation in OFDM by Phase Rotated Data Transmission

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Abstract

The Frequency offset is one of the main issues of orthogonal frequency division multiplexing (OFDM) communication systems; distort the orthogonal property of subcarriers out coming in inter-carrier-interference (ICI) which in turn degrades the system performance. Self-cancellation schemes which have been developed to combat the impact of frequency offset on OFDM systems by data symbol repetition on two adjacent subcarriers is a simple and efficient scheme but does not provide any solution to phase error problem caused by frequency offset. Further, for other adjacent data allocation scheme proposed to overcome the problem of phase error, the CIR performance is not much improved. In order to improve it CIR performance, a phase rotated symmetric data symbol transmission scheme to overcome the ICI effect has been suggested in this paper. The system performance is analyzed in terms of carrier to interference ratio (CIR) and bit error rate (BER). Through a detailed analysis and simulation, it is shown that OFDM systems using the proposed ICI self-cancellation scheme performs much better at both low and high frequencies offset situations.

An Overview on: Intrusion Detection System with Secure Hybrid Mechanism in Wireless Sensor Network

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Abstract

Wireless Sensor Networking is one of the most important technologies that have different applications. The security of wireless sensor networks is a big concern. Hence for secure communication it is important to detect and prevent the attacks in network. Major focus is given on security and on detection and prevention of attacks. Adversary can create gray-hole attack and black-hole attack simultaneously; some of the existing methods fail to defend against those attacks. The Ad-hoc On Demand Distance (AODV) Vector scheme for detecting Gray-Hole attack and Enhanced Adaptive Acknowledgment (EAACK) mechanism is used for detecting black-hole attack in network. But only by detecting and preventing the attacks, it does not provide the better security to wireless network. Therefore, to secure network a hybrid mechanism is deployed in wireless sensor network. Security algorithm for wireless sensor networks such as CAWS and Modern Encryption Standard (MES-1) will be used for secure communication. The CAWS and Modern Encryption Standard (MES-1) is an advanced cryptography method which is used for encryption and decryption process to provide special security. This paper focuses on strong security by detecting and preventing attacks, also ensures data authentication, integrity of data and solves less power transmission of data and receiver collision problem, by deploying hybrid mechanism.

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Multi-objective Optimization of Thermo-electric heat pump using genetic algorithm and Fuzzy Bellman-Zadeh decision making

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Abstract

An exo-reversible two-stage thermoelectric heat pump is thermodynamically optimized in consideration of finite time thermodynamics and multi-objective optimization using Non Sorted Genetic Algorithm approaches. The two stages of thermoelectric heat pump are assumed to be in electrically series configuration and only internal irreversibility's for the above mentioned system has been taken into consideration. Heating capacity (Q_h) and Coefficient of Performance (COP) of the system are taken as dual objective functions, which are derived by FTT approach. These two objectives are maximized concurrently using NSGA. Authors have considered five decision variables as working electric current (I), number of thermoelectric element pairs at the top and bottom stage as n and m, heat source temperature (T_h) and heat sink temperature (T_c) for multi-objective optimization of thermoelectric heat pump. MATLAB environment is used to obtain the Pareto Optimal frontier between COP and heating capacity and their best optimal values are selected by Bellman-Zadeh decision making technique. A comparative analysis of single objective and dual objective optimization of aforementioned objectives has been carried out along with along with the effect of various performance parameters on dual objective analysis are discussed and presented graphically.

Web Application for analysis of CSS Styling Issues and Gurmukhi fonts for Punjabi websites

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Abstract

There are many CSS styling issues in the display of regional languages. This paper describes the CSS styling issues for Punjabi language. A number of Punjabi websites have been analyzed to find out the CSS styling issues. The websites use Unicode and non-Unicode Gurmukhi fonts to write the content in Punjabi. But, the non-Unicode Gurmukhi fonts may not be compatible with the user's system. The analysis for the same is also presented in this paper. To find out more related problems, a web application has been designed using which the end user can apply the CSS styles to his/her own Punjabi text. The effect of applying the CSS styles may vary for different operating systems as well as for different web browsers. The issues reported by the end user will be saved in a database for analysis.

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A Survey on Congestion Control Mechanisms in packet Switch networks

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Abstract

In past few years an explosive growth is observed in internet and it is still not constant. At the same time this growth have come severe congestion problems. While there is no universal definition of congestion but the definitions and researchers conclude that any such event that consequence the degradation of performance and denial of services is congestion. The network which governs the communication must be congestion free to overcome the queuing delay, packet loss or blocking of new connection. To compensate packet some protocols use fast retransmission scheme but suffer problem of Congestion collapse. Congestion collapse means the bandwidth is available but the network becomes under-utilize. When a network is in such condition, since the network is under-utilize and the demand is high, both lead to worst throughput. The network in this situation experience high level of loss and delayed packet.

This results in need for better algorithms, protocol implementations scheme(s) and efficient network devices with sufficient space (storage), because the reason behind the network Congestion problem lies in transport protocol implementation. The obvious looking way to implement a Protocol sometimes results in wrong response to the network. The algorithms in this category are rooted in the idea that the condition of packet conservation must not violet. This paper is a survey of congestion control algorithms in packet switched networks.

Face Recognition using Back Propagation Neural Network Technique

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Abstract

The paper presents a back propagation based ANN learning algorithm for recognizing human faces. We have worked on 8 features for recognition. A facial recognition system has been proposed to recognize registered faces in the database & new faces that are not part of the database. The basic objective is to understand the ability of BPN learning algorithms for face recognition task. Few experimental observations have also been provided

A Review on Analysis of EEG signals

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Abstract

Electroencephalography (EEG) enlighten about the state of the brain i.e. about the electrical bustle going on in the brain. The electrical activity measured as voltage at different points of brain act as basis of EEG. These signals are generally time-varying and non-stationary in nature. These signals can be scrutinized using various signal processing techniques. In this paper, few statistical approaches to analyze EEG data are conversed.

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Integration of Heterogeneous Databases

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Abstract

Database integration implies the integration and aggregation of data from different databases within or outside the organization and use that integrated data in many real time applications. Today due to cloud computing come into the picture there is a need of sharing the resources and need to achieve consistency also. But there are some problems like we have different platforms, different query languages, different data models, different dependencies exist among databases and applications. So, integration solves all above problems and provides a transparent environment to the user.

Multi-objective Optimization of Solar Powered Ericsson Cycle using genetic algorithm and Fuzzy decision making

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Abstract

Solar driven Ericsson heat engine has been considered for multi-objective thermodynamic optimization. Multi-objective genetic algorithm (MOGA) and finite time thermodynamic (FTT) approaches are implemented for optimization of power output and thermal efficiency which are considered as objectives in the study. Simultaneous optimization of power output and thermal efficiency are achieved using evolutionary algorithm based on MOGA. Various effectiveness of heat exchangers and temperatures of source and sink side working fluid are considered as decision variables. Pareto front between dual objectives is found in MATLAB 7.8. Further, Fuzzy Bellman-Zadeh decision making method is used to extract best optimal values of dual objective. Simultaneous optimization of power output and thermal efficiency of proposed model is obtained at optimal values of source side heat exchanger effectiveness (ε_H), sink side heat exchanger effectiveness (ε_L), regenerator side heat exchanger effectiveness (ε_R), source side working fluid (T_h) and sink side working fluid (T_c) as 0.79, 0.79, 0.88, 901 K and 436 K respectively

Multilingual Text Summarization with UNL

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Abstract

The paper presents an algorithm for single document text summarization. Text Summarization is extraction of important information from the large documents by neglecting the unnecessary information with the help of different algorithms and providing the summary in compressed way which is very useful. Since UNL is language independent meaning summarization with UNL is carried out by analyzing and removing the unnecessary relations. UNL is used in text Summarization due to the reason that user can get the summary in his own native language.

Performance Evaluation of PEGASIS Protocol for WSN using NS2

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Abstract

Routing algorithm decides which route will be followed by packets for communication between sender and receiver. Wireless Sensor Network consists of nodes with limited power source and low bandwidth. Optimal route for communication saves more amount of energy of the network. PEGASIS protocol is based on hierarchical network architecture proposed for Wireless Sensor Network. In this paper, PEGASIS is discussed and evaluated with simulator NS2 for performance issue.

An Implementation of Energy Efficient Data Compression & Security Mechanism in Clustered Wireless Sensor Network

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Abstract

In WSN the amount of data transmission has become an important issue. New technology of compressive sensing (CS) in sensor networks new idea for data collection and target localization are research areas in sensor networks. Compressive Sensing (CS) minimize the number of data transmissions and balance of the traffic load throughout networks. After all, by using pure compressive sensing the total number of transmissions for data collection is still high. To minimize the number of transmissions in sensor networks, hybrid method of Compressive Sensing (CS) is used. Further to provide data compression in WSN a light weight Enhanced Lossless Entropy Compression (LEC) algorithm will be used for reducing size of data in the Sensor Network. Security is the major issue in the Sensor Network and to make the data secure the Advance Secured and Efficient Transmission-Identity SET-IBS protocol will be used. It is a light weight algorithm which consumes less energy while encrypting and decrypting the data. This encryption takes less energy and therefore it is helpful to make the WSN efficient. In this project the main focus is on optimization of energy in terms of lightweight security and compression techniques which reduces the complexity of Wireless Sensor Network the Advance SET-IBS protocol for encrypting the data on the sensor node is proposed.

An alternative approach for computing Monotone Polygon

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Abstract

An algorithm has been designed to compute a random monotone polygon from an input set of points lying on a 2-D dimensional plane. Our algorithm is based on sweep line method with some modifications and it computes monotone polygon in O(nlogn) time complexity and O(n) space complexity. LEDA software has been used to execute our algorithm.

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Monotone Polygons Using Linked List

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Abstract

Two heuristics have been designed to generate a random monotone polygon from a given set of 'n' points lying on a 2-Dimensional plane. The first algorithm runs in $O(n^2)$ time using constant work space algorithm. The second algorithm is designed using dynamic memory allocation to generate x-monotone in O(n) time with a preprocessing time complexity of O(nlogn).

Detection and Elimination of the Topological Threats in Mobile Ad Hoc Network: A New Approach

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Abstract

A mobile ad hoc network (MANET) is basically a dynamic wireless network in which each individual node acts as a router. Since MANET is infrastructure-less and has no clear line of defense, it is accessible to both legitimate network users and malicious attackers. Hence, to prevent the network from various attacks, scheming of a robust security design is mandatory. Various approaches have been proposed with different cryptographic solutions to countermeasure the attacks against MANET but most of them have focused on specific security threats. In our approach we mainly emphasize on the topology orientation and energy efficiency of nodes in the ad hoc network.

Digital Image Authentication and Encryption using Digital Signature

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Abstract

In this paper, a methodology for digital image authentication using digital signature is proposed. The hash of the original image is taken and is encrypted by RSA. The digital signature obtained is concealed in the image. Digital signature is sent along with the encrypted image which decreases the probability of meticulous attack by the intruder. The encrypted image is shuffled using Chaotic Logistic Map to get the final shuffled encrypted image. The use of Logistic Map improves the randomness in the image. For the authentication, a comparator is employed which evaluates correctness of the hash extracted. The simulations have been carried out to examine the proposed authentication and encryption technique.

Design of Bit Serial Parallel Multiplier Using Finite Field over GF(2P)

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Abstract

Aggregation of finite field is the easiest of all finite field operations, but on the other side, in the field of arithmetic it is most frequently usable operations. On this Paper, we present simple but effective useful up gradation of the previous hardware design of finite field Aggregation over GF(2p). Here we use Aggregation operation using p number of T flip flop instead of using combination of p number of XOR gate

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with equal number of D Flip flop Hooked loop structure so as to reduce critical path as well as Hardware complexity. The proposed finite field operations is used further for the implementation of bit serial parallel structure polynomial bases finite field multiplication and conversion of bit serial between polynomial bases representation and normal bases representation over GF(2p).The area, time, delay, Hardware complexity is reduced in proposed Bit serial/Parallel multiplier is reduced of the proposed design.

Comparison of RC6, Modified RC6 & Enhancement of RC6

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Abstract

In this paper we are going to compare the symmetric Block cipher RC6 with the two more versions of RC6. Modified RC6 and Enhanced RC6 provide some improvements of RC6, which is latest version of AES. The basic difference between the three algorithms is that RC6 works on block size of 128 bits, Enhancement of RC6 (RC6e) works on block size of 256 bits and Modified RC6 (MRC6) works on block size of 512 bits. The basic operations used in the three algorithms are same. All the three algorithms consist of three parts encryption, decryption and key expansion. In this paper we are going to compare these algorithms on the basis of encryption and decryption time on the basis of different file size and file types.

Cardiac Image Segmentation using Simulated Genetic Algorithm

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Abstract

Cardiac Image Segmentation poses many challenges arising from the large variation between different sequences of images. As we know that Segmentation of moving objects in image sequences is more difficult .In the present paper we use Simulated Genetic Algorithm for Cardiac Image Segmentation to deal with these challenges. We propose an algorithm for segmentation of medical image sequences based on Simulated Genetic Algorithm which uses K-mean clustering in the feature vector space. We use two-dimensional feature vector for clustering in the feature space. Experiments on Cardiac images have given the satisfactory results.

Detection of unhealthy region of plant leaves using Image Processing and Genetic Algorithm

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Abstract

Agricultural productivity is that thing on which Indian Economy highly depends. This is the one of the reasons that disease detection in plants plays an important role in agriculture field, as having disease in plants are quite natural. If proper care is not taken in this area then it causes serious effects on plants and

due to which respective product quality, quantity or productivity is affected. Detection of plant disease through some automatic technique is beneficial as it reduces a large work of monitoring in big farms of crops, and at very early stage itself it detects the symptoms of diseases means when they appear on plant leaves. This paper presents an algorithm for image segmentation technique used for automatic detection as well as classification of plant leaf diseases and survey on different diseases classification techniques that can be used for plant leaf disease detection. Image segmentation, which is an important aspect for disease detection in plant leaf disease, is done by using genetic algorithm.

Error Minimization Using Back-propagation in MADALINE Learning for Prediction of Secondary Structure of Proteins

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Abstract

Primary concept of Bioinformatics, the relationship between amino acid sequence and three dimensional structures is quite essential to understand. But, this relationship is not that trouble-free. So prediction of secondary structure of a protein from a primary sequence plays a vital role in structural biology. The understanding of secondary protein structures serves as an essential component to determine the functions of a protein and its interaction with DNA, RNA and enzymes. Out of a huge amount of protein sequence, only few protein structures are known to us. For predict the secondary structure from a primary sequence using computational methodology in the form of bioinformatics. Diverse methods are already proposed for the prediction of secondary structure protein but we are proposed a method by using sliding window in the input primary protein and encode them by using modulo 10 then pass from the hidden layers and use the bipolar sigmoid function for output, then calculate the error and minimize it by using BPN. Here, we are combining the model of artificial neural network for getting better accuracy in the prediction of protein secondary structure.

Problem of Secondary structure prediction minimize by using the Baum Walch algorithm

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Abstract

This research paper gives an in-depth knowledge of an algorithm to predict the secondary structure of protein from its amino acid sequence. Our purpose is to explain how this training algorithm is useful in finding unknown parameters for Hidden Markov Model. Since the strings which are output by the machine can be the result of more than one state sequences, therefore we need an algorithm for training the Hidden Markov Model wherein we optimize the transition and emission probabilities of the machine. Moreover, we will be dealing with an input sequence of protein and will find its secondary structure.

Non text eradication from degraded and non degraded Videos and Images

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Abstract

Text Segmentation of text from degraded document images is a very complex task due to high mutation between the document background and foreground region. Automatic text extraction is one of the basic feature required for content-based video indexing, automated indexing ,automated annotation ,structuring and retrieval tasks .Text detection from videos demands conversion of entire video into smaller framesets. Further the framesets are binarized to ease the extraction procedure. This in turn is followed by application of detection procedure on the static frames generated from the video. Text detection can lead to extraction of both superficial and embedded text. Embedded text will be the focus of this research paper because a part of the information depicted in the superficial text is already present in the embedded region. The cycle would start from conversion of dynamic video into static frames, followed by application of filters for noise removal ,use of basic morphological operation like dilation and erosion ,creation of bounding boxes around the textual content and finally removal of the non text region in such a manner that only the textual region in enhanced. The enhanced textual region is retained while the non textual content is eliminated.

An Introduction & Comparison: Image Steganographic Techniques

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Abstract

Steganography is art of hiding secret information in a cover media in such a way that it is not detectable to anyone. Owing to their easy availability and popularity on internet, digital images are most commonly used coverage medium in steganography. There exist a number of image steganography techniques for hiding secret information in image. Some techniques are more complex than others and each of these have its own strong and weak points. Depending upon the need of a particular application, different steganography techniques are used for different applications. This paper intends to give an overview of different image steganography techniques along with its advantages and disadvantages.

Dual Lexical Chaining for Context Based Text Classification

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Abstract

Text Classification enhances the accessibility and systematic organization of the vast reserves of data populating the world-wide-web. Despite great strides in the field, the domain of context driven text classification provides fresh opportunities to develop more efficient context oriented techniques with refined metrics. In this paper, we propose a novel approach to categorize text documents using a dual lexical chaining technique. The algorithm first prepares a cohesive category-keyword matrix by feeding category names into the WorldNet and Wikipedia ontology, extracting lexically and semantically related keywords from them and then adding to the keywords by employing a keyword enrichment process. Next, the WordNet is referred again to find the degree of lexical cohesiveness between the tokens of a document. Terms that are strongly related are woven together into two separate lexical chains; one for their noun senses and another for their verb senses, that represent the feature set for the document. This segregation enables a better expression of word cohesiveness as concept terms and action terms are treated distinctively. We propose a new metric to calculate the strength of a lexical chain. It includes a statistical part given by Term Frequency-Inverse Document Frequency-Relative Category Frequency (TF-IDF-RCF) which itself is an improvement upon the conventional TF-IDF measure. The chain's contextual strength is determined by the degree of its lexical matching with the category-keyword matrix as well as by the relative positions of its constituent terms. Results indicate the efficacy of our approach. We obtained an average accuracy of 90% on 6 categories derived from the 20 News Group and the Reuters corpora. Lexical chaining has been applied successfully to text summarization. Our results indicate a positive direction towards its usefulness for text classification.

Open Data Kit- Use of Smartphone Technology for Surveying

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Abstract

Currently surveys are paper-based which are slow and even prone to errors. So to mitigate these problems it is useful to replace the work paper work with electronic devices such as smart phones, tablets, and laptops. To replace the paper forms with electronic devices such as smart phones or tablet, I used open data kit as an application and build a survey form for pregnant women. With the help of Open data Kit (ODK), it takes very less time and very less to prone errors. It helps us in development and improvement of the growth of notation and provides us the useful result.

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Cryptographic Algorithm on Multicore Processor: A Review

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Abstract

Cryptography involves different cryptographic algorithm that contributes in the security purpose of the programs. The cryptography algorithms are divided into two parts symmetric and asymmetric. There are many different challenges to implement cryptography algorithm specially throughput in terms of time execution. So, it is important that it runs with minimum encryption and decryption time and hence improvise the time efficiency. In this paper, we study and analyze the performance of different cryptographic algorithm on multicore processors and also we explore the performance in sequential and parallel implementation of cryptography algorithm on multi core processors.

A comprehensive review on automation of Indian sign language

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Abstract

Hearing impaired people uses signs to communicate with others. Just like verbally spoken languages, there is no universal language as every country has its own spoken language so every country has their own dialect of sign language and in India they uses Indian Sign Language (ISL). In the last few years, researchers take interest in the automation of ISL. Some attempts have been made in India and other countries. In this study we try to explore and analyze the work have been made with automation of sign language and gesture recognition. We tried to explore the challenges comes in the real time sign recognition system. This review also includes the progress of standard corpus creation of the ISL.

Narrowing Awareness Gap by using E-Learning Tools for Counseling University Entrants

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Abstract

Higher Education is very crucial factor for the growth and development of individuals, and this contributes significantly to social, economic and scientific development of the country. Making an admission decision for higher education is a very challenging and critical for a student's success, especially with the rapid increase in number of different options available. A questionnaire survey of more than 400 engineering college entrants in India was conducted at the time of their counseling. The survey reveals that there is a need for counseling the entering students to help them better evaluate the different universities that they are considering for their under—graduate admissions, and making the students more aw are of the different ranking parameters that are also used by several popular university ranking systems, nationally and internationally. We also discuss how the existing awareness gap can be narrowed using appropriate E-learning tools in order to improve the qualitative and quantitative variety of the learning environment as a whole.

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Prediction of CMRS Rock mass rating using fuzzy logic

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Abstract

-CMRS (Central Mining Research Station) Geomechanical rating of rock mass is a classification system based on the various parameters which was defined by CMRS. The rating system may possess some fuzziness in its practical applications. For example, groundwater seepage and weather ability (measured by I Cycle slake durability) are related by experts in linguistic terms with approximation. Descriptive terms vary from one expert to another, while in the RMR system values which are related to these terms are probably the same. On the other hand, sharp transitions between two classes create uncertainties. So it is proposed to determine new weight interval for these parameters. Fuzzy model based on the Mamdani algorithm was introduced to evaluate proposed weights, so that the linguistic approximation based problem could be solved. Further, experiments are done with some of coal mines areas where this fuzzy based rock mass rating gives more satisfactory result than the existing CMRS rating techniques.

Dynamic Load Balancing using Buffer Management in Distributed Database Environment

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Abstract

Distributed real time database processing is still one of the most typical problems in high data computing. Complex systems have to execute millions of data accesses in each and every hours with hundreds of thousands process to executes some tens of millions of data information. This paper have focus on process with a large number of processing instances, or servers, respectively. In this paper, we introduce a dynamic Load balancing algorithm based on distributed database system. Our basic thought is to provide a considerable request response time and transaction per unit time instead of distributing the all workload among all servers equally. Next, new algorithm is designed and evaluated using analytical models.

Web service discovery and Integration with QOS parameter using SOA based Repository

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Abstract

Any Organization needs to manage and analyze its information. The source of this information may not be the same, organizations use different information system to support their different area of work. Different departments of organization use their specific information system and platform to maintain their own data. But some information is needed by different departments for co-ordination between these departments. The distributed Web Service is managed by registries is issue in the circumstances of a Web

Services which is on distributed system. The recent registry is managed and offer for distributed service registries are explained. By this explanation, it was created that none of any given offer that the requirements of flexibility, availability and scalability are proved in terms of the management of the registries. Therefore, a QoS based registry is introduced in current paper. The system uses tmodel(technical model) for storing of the service registries. In this paper involves design and implementation of a UDDI with QoS parameter. It helps to find quality web services using SOAP (Simple Object Access Protocol) message. . It serves two fold purposes; first to register quality web services. Second, find that service. Software for the implementation of these aspects is contributed in this work

A Cognitive Model of Navigation and Path finding using Cellular Automata Agent

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Abstract

Artificial Intelligence constitute a continuum of attempts to model adaptive, learning and cognitive abilities in all the varying degrees of complexities we know from biology and psychology. The purpose of present research paper is to design cognitive cellular automata agent with conflict-level spatial problem-solving abilities. Such an agent will have the capability to reason, learn and plan in a manner similar to human being. The agent architecture has a fuzzy inference system to implement the "perceive-reason-act" decision cycle of a mobile cellular automata reflex agent. In essence the agent is expected to execute an Observe-Orient-Decide-Act (OODA) loop. A cognitive model is developed to compute the best-next-move at each time instant for the goal oriented, rational and utility-driven mobile cellular automata agent. Experiments are to be planned and conducted to evaluate the problem solving abilities of such an agent when immersed in a conflict situation.

A Survey Paper on Face Recognition Using Multiple Classifier

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Abstract

Francis Galton in 1888 proposed first formal method to recognizing faces. There are no much work has been does till early 90's. But in the past decade there are too much considerable research and efforts have been devoted in the area of face recognition problem. Although there are so many face recognition algorithms which work very well in constrained environments but in real world applications face recognition is still an open and very challenging problem. Some real difficult situation like we have to identify any person in a very complex scene in video surveillance, a system that will automatically recognize the faces present in a particular scene and normalizes them with respect to scale, pose, lighting and Facial expression and after that try to associate the face to one or more faces stored in its database and gives the set of faces that are considered as "nearest" to the detected face. Each of these process can be done in three stages which is face Detection, face Normalization and face Recognition of the system is so complex that it must be studied separately. Among these algorithms there is not a single algorithm that produces 100% accuracy on the test databases and/or real time system implementation. Now there are a lot of research in this field is to gaining more attention on use of combination of two or more classifiers /recognizers known as Multiple Classifier System (MCS) or sometimes called Multiple Recognizer System (MRS), to get more accuracy.

Search System: Effective solution to medical problems

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Abstract

The content of web is increasing rapidly and search engines are used to search the web content. Along with this, it is also becoming a point of focus for academic research. Computer programs are needed in order to conduct any processing of web pages. Many web search engines as well as many more specialized search tools rely on web crawlers to acquire large collection of pages for indexing and analysis. Crawlers follow the hyperlinks in web pages to automatically download new and updated web pages. With the outbreak in diseases and increase in the number of people affected by it, there was a high need to make the process of treatment quite flexible through the combination of medicine and internet. In this paper, we describe the design and implementation of web crawler which is used to crawl the web content related to medical field. It is an innovation to help the people to readily search their nearby hospitals and utilize the best treatment as soon as possible. The project will bring disease description and possible hospitals together on a common platform. It will be an easy effort to search for the best effective hospital through internet.

Performance Comparison between Linux Containers and Virtual Machines

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Abstract

With the advent of cloud computing and virtualization, modern distributed applications run on virtualized environments for hardware resource utilization and flexibility of operations in an infrastructure. However, when it comes to virtualization, resource overhead is involved. Linux containers can be an alternative to traditional virtualization technologies because of its high resource utilization and less overhead. This paper provides a comparison between Linux containers and virtual machines in terms of performance and scalability.

A Methodology to overcome Challenges and Risks associated with Ambient Intelligent Systems

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Abstract

Ambient Intelligence is the vision of future in which environments support the people living in them. This environment is self-effacing, interconnected, adaptable, dynamic, embedded, and intelligent. The vision is to disappear the technology instead processors and sensors are integrated in everyday objects. To develop such an environment wherein technology is invisible to the user and environment directly communicates with the user. A completely interactive environment that could assists the users in every possible manner. In order to design and develop such an environment, there is a need to shift technology from machine to human communication to machine to machine communication (M2M). For such communication there is the requirement of real time data, energy and the decision making concepts which are considered as the main objectives that needs to be fulfilled. In this paper we present the major contribution of various

researchers in this field. Further we have also discussed the major challenges and risks associated with such intelligent environment and a methodology to overcome with the challenges in AmI environment.

Performance Evaluation of Different Versions of 2D Torus Network

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Abstract

Interconnection networks have been emerged as an efficient communication infrastructure to fulfill the heavy communication requirements of several applications. Torus is the most efficient interconnection network for current and future supercomputer systems. The packet delay and throughput are the major performance metrics for evaluating the network topologies in designing a network. This paper, evaluates the performance of different versions of torus interconnection networks viz. classical Torus, XTorus, and CCTorus under two different traffic applications i.e. CBR and FTP, in two different scenarios i.e. at varying simulation time, and varying network size, using dynamic routing. Here the main emphasis is given on the average delay and average throughput performance metrics. NS2 tool is used for designing and simulating the performance of the network. By this analysis we can design a better structure that will give better performance in terms of bandwidth and delay.

Survey Paper on Various Techniques of Recognition and Tracking

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Abstract

This paper describes different methods used for Player identification and total players counting. Although Player recognition, total number of players tracking and Individual player tracking have been projected as challenges because the algorithms do not give correct results. But time to time, several techniques are discovered to identify the player either by Uniform, Number written on uniform. In this survey paper, additional scope is to count the total number of players of every team.

Efficiently Improving the Security of OTP

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Abstract

The easy, convenient and remote access to internet is definitely changing the way we live. It has also become a major factor in the financial lives of millions. Using the Internet to carry out online banking simplifies our financial affairs when compared to the traditional banking method. The inclusion of Online Banking by different sectors like health, financial, educational institutions etc. which accounts for most of the population has not only increased its importance but at the same time has attracted the cybercriminals to take the advantage of the loopholes in the process of online transaction. The cybercriminals can make use of these loopholes and carry out transaction which might not come in the knowledge of user and the bank. The recent studies have shown that the OTP which was developed as a part of two factor authentication are vulnerable to attacks. In this paper, we present a new framework for enhancing authentication during online transaction which secures our OTP.

A Methodological Survey of Image Segmentation Using Soft Computing Techniques

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Abstract

This paper presents a state of art review of image segmentation using soft computing techniques. Some of these techniques are explained by in what ways they resemble GAs and in what ways they differ. Different soft techniques of implementing image segmentation have been reviewed in this paper. Finally, summaries and review of research work on image segmentation using soft computing techniques has been represented.

Easiest trick to solve trickiest expressions of stack

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Abstract

This paper mainly focuses on the best and efficient methods to make our studies more and more easier as well as enjoyable. It gives a detailed description of, using shortest tricks and techniques(methodology) to solve infix expression of stack into a postfix expression. Basically, the proposed work have been made, to provide an emphasis on, how to solve stack expression, without learning the precedence of operators rather by just memorizing two very simple words. All in all, we have focussed on, how smartwork along with hard work is beneficial in today's competitive world as compared to boring bookish methods.

Black Hole Attack's Effect MOBILE AD-HOC NETWORKS (MANET)

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Abstract

Ad-hoc network can be defined as a collection of number of mobile nodes which makes a temporary network. Black hole can be defined as a malicious node which on any request of route replies in an incorrect manner as if it has new route to the goal and then it drops all incoming packets. Loss will be very high if malicious nodes work collectively. This attack can be defined as cooperative black hole attack. This paper gives the analysis of Black Hole ADOV performance by frequently changing number of mobile nodes and by also changing black hole nodes. To analyze this various performance metrics are used which includes average end to end delay, loss of packet and packet delivery ratio. and It has been seen that effect on end to end delay is higher that on loss of packet

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Design and Development of Bottle Washer Machine for Small Scale Beverage Industry

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Abstract

The conventional bottle washer machines are suitable only for medium scale and large scale beverage industry due to their high bottle washing capacity and mechanical and control complexity. This paper proposes the design and automation of the economical bottle washer machine for the small scale beverage industry without compromising its control capabilities. The importance and requirement of the bottle washer machine in the beverage industry has been discussed. The design of the proposed bottle washer machine for RGBs (Returnable Glass Bottles) has been created in the Creo software. The different treatment zones and working of the bottle washer machine has been discussed. The bottle washer machine has been automatized using the Siemens S7-317-2-PN/DP PLC (Programmable Logic Controller) and programmed using a ladder diagram in the SIMATIC Manager. The level control for different treatment zones is achieved by means of limit switches and temperature control for different treatment zones is achieved by using Pt1000 RTD, SSR (Solid State Relay) and heater. The different control schemes for the temperature control has been discussed, implemented and compared. The results show that the PID temperature control is the most effective control scheme for the temperature control of the different treatment zones. The implementation of the PID temperature control and auto-tuning of the sample process has been shown. The holistic control of the bottle washer machine also has been discussed and assessed.

Recent Advancements in Requirement Elicitation and Prioritization Techniques

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Abstract

Requirement Elicitation identifies as one of the most crucial knowledge intensive activities of software development. Most of the system fails due to use of wrong elicitation practice. A requirement is defined as a demand or needs. A System may have a dozen to thousands of requirement. Without the Elicitation technique it is impossible to find out the requirement and need of developing system. After Elicitation Technique we need to prioritize their requirements. This Research paper is based on understanding technique and their usage in the real time applications by using the Elicitation Technique and Prioritization Technique we know that it is important for knowing the need of the stakeholder so that the system developer can get a clear view of requirement for the developing system.

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Hash_RC6 - Variable Length Hash Algorithm Using RC6

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Abstract

In this paper, we present a hash algorithm using RC6 that can generate hash value of variable length. Hash algorithms play major part in cryptographic security as these algorithms are used to check the integrity of the received message. It is possible to generate hash algorithm using symmetric block cipher. The main idea behind this is that if the symmetric block algorithm is secure then the generated hash function will also be secure [1]. As RC6 is secure against various linear and differential attacks algorithm presented here will also be secure against these attack. The algorithm presented here can have variable number of rounds to generate hash value. It can also have variable block size.

Automation of WebLink Validation using a Generic & Reusable Automation Framework

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Abstract

Success of any web application depends on the smooth functionality of the application without any intervention. A web application containing broken web links can create problem and dissatisfaction among the users. Now it becomes obligatory for the organization to perform validation of the weblinks present in their application. This paper provides a generic and reusable automation framework to perform weblink validation. Selenium is used to support the feature of cross browser testing.

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