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3rd International Conference on Data Engineering and Communication Systems

Jointly Organized by
Departments of CSE and ISE

Proceedings

Chief Editors

Dr. G T Raju & Dr. M V Sudhamani

Proceedings

3rd International Conference on Data Engineering and Communication Systems

Editors: Dr. M. V. Sudhamani and Dr. G. T. Raju

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About ICDECS - 2019

Data Engineering and Communication Systems deal with the use of techniques, methodologies in the design, development and assessment of information systems for different computing platforms and application environments. The 3rd International Conference on Data Engineering and Communication Systems (ICDECS–2019) will act as a premier forum for researchers and practitioners interested in advances and applications of Data Engineering, Image Processing and Communication Systems. It is an opportunity to present and observe the latest research trends and ideas in these areas. ICDECS-2019 aims to strengthen relationships between Industries, Organizations and Institutions. The objective of this conference is to share the research ideas & solution approaches for problems of today's Communication and Information Systems

This proceeding includes abstracts of all the accepted research articles which are categorized based on the topics related to data engineering, image processing and communication systems including but not limited to:

- Distributed, Parallel, Multimedia, Spatial, Temporal and Mobile Databases
- Data Warehousing, Data Mining, Web Mining and Knowledge Management
- Data grids, Cloud Computing, Big Data, Data Science and Analytics
- Quantum Computing and High-Performance Computing
- Computer Graphics and Animation, Computer Vision, Content Based Image Retrieval, HCI and Multi-Dimensional Indexing
- Digital Image Processing, Bio-Medical Image Processing, Image Databases and Bio-informatics
- Video Streaming, Coding and Processing, Virtual and Augmented Reality
- Artificial Intelligence, Expert Systems, NLP, Machine Learning and Soft Computing Applications
- Computer Communication Systems - Wireless, Ad-hoc, Sensor, Optical and Mesh Networks
- Grid Networks and High-Speed Networks
- Emerging Network Communications and Technologies, Protocol Engineering
- IOT, Green IT, Device Mesh and Block chain
- Network Control and Service Architectures
- Embedded Systems, Information Systems and Network Security
- Software Engineering, Software Architecture, E-Business, E-Learning, User Experience
- Web Technologies and Nano-technology
- Modeling, Simulation and Monitoring Techniques

Welcome Message – Program Chairs

It is our great pleasure to extend hearty welcome to all the delegates for ICDECS-2019 which is held during Dec 19-20, 2019 at RNS Institute of Technology, Bengaluru.

This conference focuses on new developments in the principles and practices related to Data Engineering and Communication Systems. ICDECS-2019 provides an opportunity for our teachers, research scholars, practitioners, developers, and users to participate, present and discuss emerging trends, concepts, techniques, technologies and experiences in Data Engineering and Communication Systems.

ICDECS-2019 features one keynote address, two invited talks, one panel discussion, two tutorials, 3 research conclave sessions and 23 sessions on state-of-the-art research results ranging from cutting edge topics to more established areas in Data Engineering, Image Processing, and Communication Systems. We are fortunate to have some of the leading researchers as keynote and invited speakers in the theme areas of the conference. This gives an opportunity for the delegates and participants to interact with the best minds for inspiration and guidance to address some of the challenging interdisciplinary problems.

We have received 198 research papers from three countries. These papers were peer reviewed by the program committee members and external reviewers in the field. Over 132 papers were shortlisted for presentation in ICDECS-2019 and subsequent publication at Elsevier – Scopus indexed International Journal

We thank the Keynote speaker, Invited speakers, Tutorial speakers, Panel members, and Session chairs from Academia and Industry for their kind acceptance and active involvement in ICDECS-2019. We thank all the authors for submitting their papers for consideration in ICDECS-2019. Also, we would like to thank the advisory committee members for their valuable advises, program committee members and external reviewers for their support and generous contribution of the time towards the review process. Very special thanks to the sponsors of ICDECS-2019 for their timely technical/financial assistance without which the conference would have been impossible.

We acknowledge sincerely and express our deep sense of gratitude for the great support from our magnanimous Management, Director, Principal, Registrar, Advisory committee members, organizing committee members, technical committee members, faculty & supporting staff members of CSE and ISE departments, volunteers and all those who directly or indirectly helped us in making ICDECS-2019 a grand success.

Dr. M V Sudhamani
Dean (R&D), Professor and HoD - ISE
RNS Institute of Technology, Bengaluru
Program Chair, ICDECS-2019

Dr. G T Raju
Vice Principal, Professor and HoD - CSE
RNS Institute of Technology, Bengaluru
Program Chair, ICDECS-2019

Message from Chairman

Dr. R N Shetty
Chief Patron of ICDECS – 2019
Chairman, RNS Groups of Companies

The foundation stones of RNSIT are laid on the essence of academic pursuit and excellence. Excellence in any work can be achieved with utmost dedication, hard work and perseverance. I am delighted about the 3rd International Conference on Data Engineering and Communication Systems (ICDECS-2019), jointly organized by the two premier departments of our Institute, CSE and ISE, during December 19-20, 2019. It is indeed a great pleasure and pride for me to disclose welcome note for a thought-provoking International Conference. ICDECS has gained reputation as one of the leading conferences in the region, by offering research aspirants a platform to learn, to share and to discuss their needs amongst the stalwarts at both national and international levels in their research domains, which is why the conference attendance has soared to new heights. I congratulate and appreciate the organizing committee for showing a keen interest in organizing 3rd edition of ICDECS after a successful outcome of the two earlier editions, ICDECS-2011 and ICDECS-2015.

This International Conference acts as a forum for the professional development of the Institute. It ensures that the Institute is moving in the right direction towards the International Recognition for its contributions to the academic world with new ideas and research findings. I feel proud of our Institution, for the pace with which Institution is getting developed in all spheres.

I am sure that such a get together of Academicians and Researchers from all over the Globe, would bring in new knowledge to the world in general and to the student community in particular. I wish all the very best for the Organizers, Delegates, and Participants of this conference and also a thoughtful academic & research exposure and a pleasant stay for each one of them.

I look forward to welcome you to ICDECS - 2019.

Message from Director

Dr. H N Shivashankar
Patron of ICDECS – 2019
Director, RNS Institute of Technology

I am very happy that the faculty and students of our Institute are engaged in various path-breaking innovative research activities. Every department organizes conferences and seminars frequently on contemporary and relevant topics in order to facilitate research in the areas which will lead to necessary transformation in the academic excellence.

It is quite heartwarming to note that the departments of Computer Science and Engineering and Information Science and Engineering of our Institute are hosting their 3rd International Conference on Data Engineering and Communication Systems (ICDECS-2019), on 19th and 20th December 2019. Organizing such a path-breaking event at this point of time reinforces our objective of developing an environment for the exchange of ideas towards technological developments. I wish the conference will be able to deliberate on current issues of National and International relevance, particularly in the field of Data Engineering, Big Data Analytics, Cloud Computing, Networks, Image Processing, Artificial Intelligence and Machine Learning etc. There have been unprecedented numbers of quality papers that are to be presented in the conference. I am sure that this occasion will provide a fruitful environment for the researchers and academicians to freely exchange the views and ideas with their peers and domain experts.

I convey my warm greetings and felicitations to the organizing committee and the participants and extend my best wishes for the success of the conference.

Message from Principal

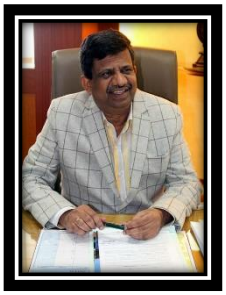
Dr. M K Venkatesha
General Chair of ICDECS – 2019
Principal, RNS Institute of Technology

The departments of CSE and ISE right from their inception, have been active in research and innovation and have setup an ambient academic environment for their students and research scholars. The 3rd International Conference on Data Engineering and Communication Systems (ICDECS-2019) is yet another venture to provide a platform for academicians, students, research scholars and industry personnel – globally to discuss on contemporary trends and innovations in Data Engineering and Communication Systems. I am extremely happy to know that all the papers presented in the conference will be submitted for inclusion in Elsevier-Scopus indexed journal.

I extend my best wishes towards the success of the conference and urge all participants to brainstorm on the various thrust areas of the conference. I wish all participants/delegates a happy stay in our campus and look forward to your participation in various events of ICDECS-2019.

Wishing everyone a happy new year 2020 !

Chief Guest



Dr. Karisiddappa
Hon'ble Vice Chancellor
VTU, Belagavi

Academic Qualifications:

After his graduation, B.E. (Civil Engineering) in 1981 from University of Mysore (MCE, Hassan) securing 7th Rank, Dr. Karisiddappa did his M. Tech. (Structural Engineering) in 1986 from IIT, Madras and Ph.D. in 1994 from IIT Roorkee (Formerly University of Roorkee, Roorkee)

Teaching and Administrative Experience:

Dr. Karisiddappa is the present Vice Chancellor of Visvesvaraya Technological University, Belagavi, a leading University in Asia and the only technical university in the state of Karnataka. Prior to this, he had held many teaching and administrative positions starting with the position of Lecturer at Adichunchanagiri Institute of Technology, Chikmagalur in 1982. For a brief period, he also served as Assistant Engineer in PWD, Government of Karnataka. Later, he joined the Malnad College of Engineering, Hassan, in 1983 and served for 27½ years till 2010 in various capacities such as Lecturer, Assistant Professor, Professor, Head of the Department Vice Principal and Dean (Academic Affairs). Prior to his appointment as Vice Chancellor of VTU, he was the Principal of Government Engineering College, Hassan from 2010 to 2016.

His research and other academic accomplishments include:

Teaching, guiding (both UG and PG) and research experience of about 35 years in the field of Structural Engineering, undertaking and completing Research Projects with the grants sanctioned by AICTE, DRDO & KSCST and had carried out various Structural Engineering Consultancy Projects. Dr. Karisiddappa has published more than 50 Research Papers in refereed International and National Journals in the area of Concrete Technology, Finite Element Analysis, Neural Networks, Structural Stability and Soil Structure Interaction. He has organized, attended, and delivered Lectures in various International and National Conferences, has guided over 34 M.Tech. candidates, 6 candidates for Ph.D. and 1 candidate for M.Sc. (Engg.) by Research. As a Principal at the Government Engineering College, Hassan from 2010 to 2016, he established and implemented good practices in teaching, learning and research to impart quality education and transformed the college as one of the best learning centres in Karnataka.

He has Membership to several national and international Professional Bodies which include:

Fellow Institution of Engineers (F.I.E.), International Society for Soil Mechanics & Geotechnical Engineering (I.S.S.M.G.E.), Life Member of Indian Society for Wind Engineering (M.I.S.W.E.) and Life Member if Indian Society for Technical Education (I.S.T.E.)

By virtue of his administrative experience, Dr. Karisiddappa has been made member to Governing Councils of several organizations such as Karnataka State Open University, Karnataka Examination Authority, Karnataka State Higher Education Council, Karnataka Biotechnology and Information Technology Services (KBITS), Board for IT Education Standards.

His Vision as Vice Chancellor of VTU are:

- To transform the University from a teaching centric University into a teaching, research, consultancy and knowledge centric University.
- To create exciting and supportive learning environment that transforms the engineering students and inspire them to make a real difference to the society.
- To be the leading pioneers in the field of technical education and research.
- To train the young faculty in terms of curriculum delivery, teaching methodology through
- VTU HR Center and to design and deliver appropriate need based curriculum.

Achievements as Vice Chancellor of VTU, from 26-9-2016 till date:
Starting from introducing of in-house Digital Evaluation System at VTU many of his other initiatives include, development of infrastructure and starting of courses under National Skill Development Centre at Dandeli, in association with Govt. of Karnataka, initiation and establishment of VTU Skill Development Centre and PG Centre at Talkal of Hyderabad-Karnataka Region, establishing Centre of Excellence in Aerospace and Defence under VTU in association with Govt. of Karnataka and Dassault Systems, granting Financial Assistance to the students in final year of UG Courses for their Project works, introduction of Research Fellowships to the Research Scholars working at VTU Regional Centers, introduction of new Regulations governing Doctor of Philosophy programmes in accordance with UGC guidelines, introduction of online registration of Research Supervisor and introduction of GATEWAY system through SBI under which all the remittance to the University can be made through online from any corner of the Country. Responsible for introducing Faculty Enrichment Programme and establishing "Human Resource Development Center VTU-HRDC at Muddenahalli Campus, and introduction of new curriculum based on AICTE model curriculum. Responsible for getting
12B status to VTU as per UGC Act, Responsible for implementing activities under TEQIP 1.3. Initiatives to introduce new UG and PG programmes under VTU.

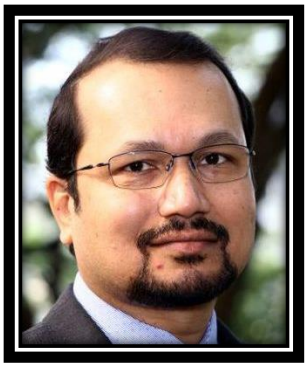
Awards: Dr. Karisiddappa is the Recipient of
Innovative Educator Award 2019 by MindMatrix, for his vision to create an exciting & supporting learning environment that transforms the engineering students to face new challenges to the society.

ISTE National Award for Best Administrator for the year 2017, in honour of successful administration in the area of Technical Education.

Top Notch Alumni Award *by MCE Alumni Association (MAA) for the year 2016*

D. Govind Das Award *at the 15th Kannada Sahitya Sammelana of Hassan District held during 27th -29th January 2017.*

Guest of Honour



Mr. Ramesh C Pathak
Delivery, Engineering and Solutioning Leader
Chief Architect - Big Data Analytics and Cloud
Master Inventor at IBM
Bengaluru, Karnataka, India

An engineering graduate from IIT Kanpur, Ramesh is a Senior technology and business leader with 23+ years of rich experience in technology, solutioning, engineering and business leadership roles in Cloud, Digital Strategy, Enterprise Architecture, Big Data Analytics, Middleware and Platform technologies. His recent role has been leader of Public Cloud Offering and Big Data Analytics Service at IBM. He is Associate Director, Senior Technical Staff Member (STSM) and a Member of IBM's top technology leadership group (AoT). Ramesh has designed managed public cloud service offering from scratch and grew it to tens of millions of USD. Ramesh gives strategic direction and leadership to presales leaders and solution architects on high value deals and to respond to RFPs and create winnable bids. He leads senior technical team and works with senior client leadership to design their digital strategy including cloud adoptiin, DevOps, big data. Ramesh brings deep expertise and experience in big data architecture and data governance combined with strong understanding of service delivery. Ramesh leads delivery innovation and transformation of GTS processes using data driven cognitive technologies and IBM Service Platform with Watson.

Ramesh led global delivery and operations, Transition and Transformation and Service Outsourcing projects for big customers. He has systematically identified several multi million USD optimization opportunities and played significant roles in winning many large deals. Ramesh has won several IBM's global awards and has filed 15 patents. He is elevated to Senior Member grade of IEEE and ACM. He has organized, and been speaker at conferences (IEEE, IoT Asia Summit, CII IoT Summit, PMI Leadership Conference).

Has 19 top technology certifications: IBM Certified Master Specialist, AWS Certified Solution Architect Professional, Oracle Certified Master, VMware DC Virtualization, Certified in Red Hat, Golden Gate Replication, RAC and GRID, PMP, ISO, ITIL. As a chief architect, engineering and delivery leader of Public Cloud Offering in IBM, Ramesh has led defining architecture, design and development of managed services offering for Competitive Cloud (including Amazon Web Services - AWS and Azure). As chief architect and leader of Big Data Analytics services.

Ramesh has led data engineering and data analytics including data modelling, data ingestion, data storage, data governance, data lineage, data quality and data analytics using big data technologies including Hadoop, Apache Spark, Python, Infosphere and RDBMS and NoSql technologies to lead delivery innovation and transformation of GTS processes using data driven cognitive technologies and IBM Service Platform with Watson.

Invited Speaker

Dr. S S Iyengar
Director & Ryder Professor
School of Computing & Information Sciences
Florida International University (FIU), USA

Dr. S S Iyengar is a computer scientist of international repute who has been a pioneer in multiple fields. Marked by his incredible record of success in the areas of world-class research, superb teaching, and excellence in community service, he has also significantly impacted industry, through his many discoveries and patents. His distinguished international and national research work have consistently been recognized by US government agencies, industry pioneers, and his research colleagues. His work has been featured on the cover of the National Science Foundation's breakthrough technologies in both 2014 and again in 2016.

Dr. Iyengar has garnered multiple awards for his work and made fundamental contributions in a variety of areas that impact our lives today. His seminal contributions continue to be seen in places like Raytheon, Telcordia, Motorola the United States Navy, DARPA and other universities and research laboratories around the world.

Tutorial Speakers

Dr. Mohit P Tahiliani
Asst. Professor, Dept. of CSE
NITK, Surathkal

Mohit P. Tahiliani is an Assistant Professor of Computer Science and Engineering at NITK Surathkal, India. He obtained Ph.D. in Congestion Control Mechanisms for the Next Generation Internet, completed from the Department of Computer Science and Engineering at NITK Surathkal in 2013. Mohit has been using and contributing to open source projects since past 11 years. Together with his students, Mohit has contributed towards developing new models in ns-3. He is a Member of the Steering Committee of ns-3 Consortium. Recently, his team at NITK, Surathkal contributed to the mainline of Linux kernel (v5.1). Currently, he is actively working on Fast Packet Processing techniques, efficient NFV deployments and Named Data Networking.

Mr. Sidharth M Patil
Expert Technologist
HPE, Bengaluru

Sidharth has over 15+ years of software industry experience in design and development of software products ranging from personal computing devices to enterprise level distributed data storage devices. He holds master's degree in system software from BITS Pilani. He has authored 8 patents in the area ranging from handheld devices to enterprise level hyper converged products.

Topic

The Impact of Artificial Intelligence and Machine Learning on Digital Science and Engineering

Dr. T N Nagabhushan
Principal, SJCE, Mysuru

Prof. K Gopinath
Professor, CSA, IISc, Bengaluru

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Director, Head of IDT, India

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Lead Data Scientist, Ola Cabs, India

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Report on ICDECS-2019 and Acknowledgment

ICDECS-2019, a premier forum in the area of data, image and networking management, provides unique opportunity for data and communication systems researchers, users, practitioners, and developers to exchange new ideas, approaches, and methodologies. The ICDECS-2019 program is composed of the traditional elements: keynote and invited talks, paper presentation sessions, tutorials, research conclave and panel discussion. ICDECS 2019 received 203 research manuscripts. We thank all authors for submitting their innovative works to the conference.

To facilitate selection of research papers, we organized the Program Committee (PC) into 3 topic-based tracks. Each track was headed by a coordinator who formed a committee to evaluate the papers assigned to that track. The evaluation process consisted of three distinct phases: *initial reviews of the papers by PC members*, *author responses to these reviews, and finally, PC's discussion and fine-tuning of the reviews*. The research program features 162 papers that are presented in 10-minute slots. In addition to the paper presentation sessions, the conference program includes 2 tutorials of 75 minutes each. It also includes research conclave and one panel discussion on topic of current interest to the data engineering & communication systems community.

The success of ICDECS-2019 is a result of collegial teamwork from many individuals, who worked tirelessly to make the conference a top research forum. We acknowledge and thank the sterling endeavors of all the members of advisory committee, organizing committee, technical committee, finance committee and program committee.

We express our deep appreciation of the outstanding work put in over many months by all our faculty and staff members. Without their tireless efforts, this conference would not have seen its day light. We are also thankful to the student volunteers from CSE and ISE departments of RNSIT.

In addition, there are many other individuals whose contributions we warmly acknowledge. We express our deep sense of gratitude to our Chairman Dr. R N Shetty for his constant encouragement and magnanimous support. We benefited greatly from the sage advice provided by our Director Dr. H N Shivashankar, the Patron of ICDECS-2019 and from our Principal Dr. M K Venkatesha, the General Chair of ICDECS-2019. Also, we would like to acknowledge the support from our Registrar Mr. Ganapati Yaji.

We warmly acknowledge the financial/technical support of our corporate sponsors: Canara Bank, CSI-Student Chapter of RNSIT, IEEE-Student Chapter of RNSIT, VTU-Belagavi, ATS Solutions, and Reliance Tailors.

Finally, we thank all the speakers, authors, presenters, participants and session chairs of the conference. We hope all of you will cherish this conference for years to come!

Dr. M V Sudhamani & Dr. G T Raju
PC Chairs - ICDECS 2019

Sl. No	Abstract of Journal Papers Presented in ICDECS-2019		Page No.
1.	**Authors**	**Mr. Sanjay Kumar N V, Dr. Keshava Munegowda**	
	Paper Title	**Distributed Streaming Storage Performance Benchmarking: Kafka and Pravega**	
	Abstract: The performance benchmarking tool for a distributed streaming storage system should be targeted to achieve maximum possible throughput from the streaming storage system by thrusting data massively. This paper details the design and implementation of high-performance benchmark tool for Kafka and Pravega streaming storage systems. The benchmark tool presented in this paper supports multiple writers and readers. The Pravega streaming storage is evaluated against Kafka with respect to performance. **Keywords:** Benchmarking, Big Data, Concurrency, Distributed Systems, Events, Kafka, Latency, Open Messaging, Performance, Pravega, Streams, Storage, Throughput.		**1-8**
2.	**Authors**	**Vandana B, Dr. S Sathish Kumar**	
	Paper Title	**Hybrid K Mean Clustering Algorithm for Crop Production Analysis in Agriculture**	
	Abstract: The proposed research work aims to perform the cluster analysis in the field of Precision Agriculture. The k-means technique is implemented to cluster the agriculture data. Selecting K value plays a major role in k-mean algorithm. Different techniques are used to identify the number of cluster value (k-value). Identification of suitable initial centroid has an important role in k-means algorithm. In general, it will be selected randomly. In the proposed work to get the stability in the result Hybrid K-Mean clustering is used to identify the initial centroids. Since initial cluster centers are well defined Hybrid K-Means acts as a stable clustering technique. **Keywords:** Cluster analysis, K-Means, Precision Agriculture		**9-14**
3.	**Authors**	**Prerana Chaithra, Dr. Shantharam Nayak**	
	Paper Title	**Quality Assurance Techniques in SRS Documents**	
	Abstract: For development of software, the most important aspects are the software requirements. They are the foundation stone for initiating any software development process. Software requirements documents contain the needs of the customers in natural language. By using various methods like reviews, inspections, walkthroughs, the content of the software requirement can be checked manually to reduce ambiguity. In recent years there is an attempt to automate these activities as a result of advancement in automation of natural language analysis. Automation of text mining techniques and text analysis is leading to feasibility of automation of requirements documents processing. The process can be completed in minutes now which were taking weeks earlier. Automation of analysis of text has triggered numerous possibilities for quality assurance of requirements. The possibilities of automation are model checking automation, automated rule checking, automated test case execution and measurement automation. In future more tools will enter the scene for automation of requirements quality assurance. At present most of them are in experimental stage. There is a definite need for more research in this field. **Keywords:** Ambiguity, Requirements document, Software Requirements, Quality assurance		**15-19**
4.	**Authors**	**K S Sampada, N P Kavya**	
	Paper Title	**Machine Learning Approaches for Keyword Extraction and Indexing**	
	Abstract: The digital age results in the creation of massive information. It is a common tradition among the users to digitalize almost every moment of daily life, since it has become convenient to fetch the information as and when needed from the Internet. User can able to retrieve information by providing query keyword. The objective of the search is to quickly return the set of most relevant documents given a search string. Accomplishing this task for a fixed query involves determining the most relevant documents form the big-data. Queries given to the		**20-24**

	IR systems are enabled by the keywords. Keyword extraction is a process of identifying the document. Manual keyword extraction is cumbersome and it is in feasible to efficiently identify all the keywords in the document. Therefore, the machine learning approaches for keyword extraction are proposed. In this paper various machine learning approaches have discussed along with its merits and de-merits. Here we are also proposing a trained index structure which is efficient to identify the specific locus of the record. **Keywords:** Keyword extraction, Indexing, Information system, Machine learning approaches.	

5.	**Authors**	**Ms Kaithekuzhical Leena Kurien, Dr Ajeet Chikkamannur**
	Paper Title	**An Ameliorated Approach for Fraud Detection using Complex Generative Model: Variational Autoencoder**
	Abstract: Perpetrating fraud for financial gain is a known phenomenon, in this fast-growing adoption of smart phones and increased internet penetration, embracing digital technology. Evolution of financial transactions over the years, from paper currency to electronic media, leading the way in the form of credit cards or interbank electronic transactions. Consumers trending towards e-commerce hasn't deterred criminals, but considered this as the opportunity to make money through defrauding methods. Criminals are rapidly improving their fraud abilities. The current Supervised and Unsupervised Machine Learning Algorithm approaches to the discovery of fraud are their inability to learn and explore all possible information representation. The proposed system, VAE based fraud detection, which uses a variational autoencoder for predicting and detecting of fraud detection. The VAE based fraud detection model consists of three major layers, an encoder, a decoder and a fraud detector element. The VAE-based fraud detection model is capable of learning latent variable probabilistic models by optimizing the average value of the information observed. The fraud detector uses the latent representations obtained from the variational autoencoder to classify whether transactions are fraud or not. The model is applied on real time credit card fraud dataset. The experimental results show that, implemented model performs better than supervised Logistic Regression, unsupervised Autoencoders or Random Forest ensemble model. **Keywords:** Fraud detection, credit card, machine learning, generative models, Variational Autoencoder.	**25-31**

6.	**Authors**	**Khushboo Lathia, Mahesh Maurya**
	Paper Title	**Text Generation using Neural Models**
	Abstract: The use of automatically generated summaries for long/short texts is commonly used in digital services. In this Paper, a successful approach at text generation using generative adversarial networks (GAN) has been studied. In this paper, we have studied various neural models for text generation. Our main focus was on generating text using Recurrent Neural Network (RNN) and its variants and analyze its result. We have generated and translated text varying number of epochs and temperature to improve the confidence of the model as well as by varying the size of input file. We were amazed to see how the Long-Short Term Memory (LSTM) model responded to these varying parameters. The performance of LSTMs was better when the appropriate size of dataset was given to the model for training. The resulting model is tested on different datasets originating of varying sizes. The evaluations show that the output generated by the model do not correlate with the corresponding datasets which means that the generated output is different from the dataset. **Keywords:** Text generation, recurrent neural networks, LSTM, GRU, Adversarial training Machine translation	**32-36**

7.	**Authors**	**Gowramma G S, Dr. Shantharam Nayak Dr. Nagaraj Cholli**
	Paper Title	**Intrinsic and Extrinsic Factors Predicting the Cumulative Outcome of IVF / ICSI Treatment**
	Abstract: Infertility rates in India becoming increased in last decade principally due to the urbanization conditions and the lifestyle habits. It is giving alarm by continuously reporting the progress in incident cases of infertility amongst the young Indian adults of both male and female population. Among the various Assisted Reproductive Technologies (ART) available today in the	**37-43**

	treatment of infertility, In Vitro Fertilization (IVF) is found to be the most applicable treatment method of choice. This involves the administration of different hormones and drugs to treat infertility. In the present scenario technically IVF treatment process is tedious, laborious, high cost and most importantly success rates reported to be very low (20-30%). The prediction of IVF success rates is becoming an important scientific knowledge and practice, which helps both the doctor and the candidate couple to know about the conditions hence to take the right decision. The accurate prediction of the IVF success rate is really a challenging task in obstetrics and gynecology medicine. The success rates of the IVF depends on the various factors such as Intrinsic factors i.e, Genetic predisposition, Age, Body mass Index, Hormonal balance, Embryo viability, Sperm quality, Endometriosis and overall patient's response level of the candidate couple and the Extrinsic factors such as Medical equipment technology, Treatment methods, Personal experiences of clinicians and embryologists, Process time, Stress due to the lifestyle etc. **Keywords:** Success rates prediction, Data analytics, Intrinsic factors, Extrinsic factors.	
8.	**Authors**	**Prashant Y Niranjan, Vijay S Rajpurohit, Rasika Malgi**
	Paper Title	**Development of Agriculture Chatbot using Machine Learning Techniques**
	Abstract: Agriculture data is a main source of country's economic growth. It is important to provide agriculture related information to all the people who are involved in agriculture activities as and when required. This meaningful information is used by people who supply services to agriculture domain and to take some correct decision related to agriculture to apply for their field. The solutions to this problem are given by the efficient interaction of computer with human. Chatbot system provides ability to extract the exact answer to the queries posed by farmers. The proposed system is called as Agriculture Chatbot system or even it is called as Question-Answering system for agriculture domain, where farmer is asking the agriculture related question which fetches the precise answers for the asked questions by farmers in natural language and processes the query using RNN (Recurrent Neural Network) deep learning algorithm to extract correct answer. **Keywords:** Chatbot, Recurrent neural network, Deep learning, Natural language, precise answer.	**44-48**
9.	**Authors**	**Prajwala T R, Dr. D Ramesh, Dr. H Venugopal**
	Paper Title	**Meteorological Data Analysis of Bangalore Region for 30 Years using Artificial Neural Networks (ANN)**
	Abstract: This paper focuses on weather data analysis for Bangalore urban region (Karnataka, India) over a span of 30 years. The 30 years data is preprocessed to have average monthly temperature, vapor pressure, PET (Potential-Evapo Transpiration), cloud cover, rainfall. These features are considered as factors affecting the rainfall. The correlation between the above mentioned parameters with the monthly rainfall are found using spearman correlation. Artificial Neural Networks (ANN) is used to classify instances as less rain, medium and heavy rain. The results of accuracy, confusion matrix is tabulated. Also the optimal number epochs, number of neurons and number of hidden layers is also identified for the data. The graph of actual output and predicted output is plotted. **Keywords:** Spearman coefficient, Vapour pressure, PET (Potential-Evapo Transpiration), MultiLayerPercepton, confusion matrix, precision, Recall	**49-51**
10.	**Authors**	**Madhukar M, Nagesh Kumar D N, Dr. M C Hanumantharaju, B M Chandrashekar, Kajol R**
	Paper Title	**Reconfigurable FPGA Architecture for Cryptographic Hashing Algorithms**
	Abstract: The proposed research work aims to perform the cluster analysis in the field of Precision Agriculture. The k-means technique is implemented to cluster the agriculture data. Selecting K value plays a major role in k-mean algorithm. Different techniques are used to identify the number of cluster value (k-value). Identification of suitable initial centroid has an important role in k-means algorithm. In general, it will be selected randomly. In the proposed work to get the stability in the result Hybrid K-Mean clustering is used to identify the initial	**52-58**

	centroids. Since initial cluster centers are well defined Hybrid K-Means acts as a stable clustering technique. **Keywords:** Communication channel, Decryption, Encryption algorithms, Hash function, Reconfigurable cryptographic, Secured Hash Algorithms.	
11.	**Authors** | **Kripa Sekaran, Priyanka K, Pooja R** **Paper Title** | **Route Recommendation System based on Safety Metrics and Route Profiling** **Abstract:** This project is based on the crime rates happening in our city and the measures taken to curb them to help in strengthening the perception of security in the minds of women and also people who are travelling alone at night. Safe route recommendation is an important part of the field of intelligent transportation, which can provide the guidance of travel mode and travel route for women as well as to travellers. The current route recommendation method has the complexity of urban transports, such as single traffic plan recommendation that often fails to meet the expected requirements. In order to solve the limitation of the one-way vehicle travel method, we propose a safe route recommendation method which includes three modes of transportation, including cars/cabs/auto rickshaws, public transport vehicles, and walking. The routes are represented in different color each denoting a different degree of safety gives user a choice to choose from. The routes/paths are categorized into high, medium and low risk areas. In GI Science, problems related to routing systems have been deeply explored an approach to provide risk score defined by crime rates for generating safe routes This obtained data is then displayed in a map with red, yellow and green patches denoting high, medium and low risk areas respectively. Thus, data are classified by the decision tree (ID3) algorithm. A geospatial repository is used to store tweets related to crime events of the city and the city's street network is converted into graph format which will make the routing and classification mechanism easier. A forecast related to crime events that can occur in a certain place with the collected data was performed. The ID3 classifier classifies each routes into the following labels High, Medium, Low which describes the extent to which the specific route is risky. Our application presents all possible shortest and safe paths between the starting and destination point to the user. **Keywords:** Classifier, Data Mining, Decision tree algorithm, Safe route recommendation	**59-61**
12.	**Authors** | **Vasireddy Prabha Kiranmai, Sharmitha S Bysani, Vijaya Kumar B P, Kusuma S M** **Paper Title** | **Design and Development of Techniques for Equipment Health Monitoring System** **Abstract:** Machines in Industries are often subjected to enormous wear and tear, which if unnoticed, may lead to production delays and increased maintenance cost. Machines must be able to analyse and provide statistics about its health, so that preventive measures can be taken to avoid catastrophes in the industries. Thus, there is a need of automated fault detection and prediction of system's condition. The concept of equipment health monitoring is a crucial step in the field of research and development in the manufacturing industries. This equipment makes it handy in situations where machines require continuous monitoring and is difficult for humans to provide such attention, especially in the case of unmanned vehicles. Prediction of the status of equipment by acquisition of data from industrial machinery is the critical step in building such a system. Health of machines can be estimated by the data collected by the sensors-temperature, accelerometer, etc. integrated with an embedded computing system, like a Raspberry Pi. This IoT model consisting of embedded system with wireless connectivity collects real time data from the equipment/machinery used in industries. This data is used to analyse and predict the health of the equipment, examine the steady-state characteristics using Machine Learning technique, Hidden Markovian Model. The concept of the proposed IoT model is evaluated over a conveyor belt test rig under various conditions, like different loads placed on various locations of conveyor belt and the belt is made to run at different speeds and data is collected over all these conditions. Then, a data model is created using Hidden Markovian Model which is further used in predicting the state of the belt based on the sequential data, here it is the sensor data. Given a state of the belt, this model can predict whether the belt is in proper condition or not, and if human intervention is required. Thus, at any point of time, having this setup on the machinery which needs to be monitored can be used in predicting the faults and notifying the user in case of any faulty behaviour or malfunctioning of machines. This setup can be used for any machines which are subjected to any	**62-68**

	motion, vibration and thermal changes. This helps in creating a completely automated fault detection systems in the present Industries. **Keywords:** accelerometer, automated fault detection, condition of machine, equipment health monitoring, IoT, Hidden Markovian Model, sensor	
13.	**Authors** — **Priyanka C Hiremath, G T Raju** **Paper Title** — **Recommender System for Geo-Social Access Control Framework**	
	Abstract: A malicious attack or threat can happen within any organization, from their own employees, administrators, contractors or former employees, who pose the important resources of a company such as database, physical laboratories and financial resources. In an organization insider attacks are most common as well as most costly affair. According to United States cyber security 2018 statistics, insider threat holds the risk of 74% out of surveyed organizations. The insider threat has caused immense loss to data as well as monetary assets. Among the surveyed organization by US cyber securities, 53% of organization claimed their remediation cost was around $ 100000 and in 2018 the number raised to 66%. Higher number of organization claimed insider attackers were most costly attacks in comparison with external attacks. Some of the probable reasons, why it is difficult to stop an insider attack are, firstly insider threat may be unintentional and all of sudden. Second is distinguishing regular work by employee and malicious work is difficult. Third is most of the insider attackers are technologically sound to mask their intentional activities or easily erase the intentional activity signs from the system before anyone observes it. Lastly and the worst case is employees simply say their intentional act was by mistake and escape from scenario. To avoid such malicious insider attacks lots of research is done on access control. Access control is a method or technique to control the access of an insider to the organizations valuable resources. There are different types of access control models, having their own access control policies and criteria to grant the authority, to have an access to specific resources of an organization. In this paper we discuss the different types of technical access control models that have been developed with certain parameters and their advantages and limitations. **Keywords:** Insider attack, Context, Attributes, Roles, Resources, Geo-Social Data, Access control.	**69-74**
14.	**Authors** — **Lubna Taranum M P, Rajashekar J S** **Paper Title** — **Analysis of Diabetes Mellitus for Early Prediction and Automatic Detection of Exudates for Diabetic Retinopathy**	
	Abstract: More than 42 Cr new diabetes Patients added worldwide as per the World Health Association Annual Report Statistics [3, 7]. The World Health Organization (WHO) reports that there is measurable hike in the number of individual Diabetes cases in the various regions and sectors of WHO Survey [9]. Because of the high level of stress, irrespective of the Gender and income, the Death Toll increasing every year. In this paper, hypothetical analysis-based Survey done of diabetes mellitus for early prediction and Automatic Detection of Exudates for Diabetic Retinopathy [8, 17]. The Hypothetical analysis results indicate the severances of the issue and significant importance of the need for early prediction and Automatic Detection [13]. With hypothetical analysis across various models we proposed to provide a vision into various machine learning models and its prognostic precision in relations of the recital, accuracy improvement from 2+% to 12+%. **Keywords:** Exudates, Diabetic Retinopathy (DR)	**75-79**
15.	**Authors** — **Veena M, Rashmi A R** **Paper Title** — **Techniques for Extracting Region of Interest in Breast Cancer**	
	Abstract: The main aim of the project is to develop an automatic system which detects the stages and Region of Interest (ROI) in Breast images. Breast cancer in females is one of the main causes for deaths among women. Finding at early stage of breast cancer which helps in the treatment and recovery rates. Discovering region of interest for breast in the breast images is a demanding problem. Retrieving of breast tumors region and the pectoral muscle is a key step in the process of CAD.	**80-82**

	Keywords: Breast Cancer, Region of Interest (ROI), DBT images, Segmentation.	
16.	**Authors** — **Suyoga Srinivas, Naveen N Bhat, Yashwanth Venkat Chandolu** **Paper Title** — **Depression Analysis using Machine Learning Based on Musical Habits**	
	Abstract: Depression has been a main cause of mental illness. Depression results in vital impairment in lifestyle. A significant reason for suicidal cerebration is observed to be depression. Music varies the intensity of emotional experience by captivating the neurotransmitters and brain anatomy, including the brain's dopaminergic projections. The popularity of using Regression Models in data analysis in both research and industry has driven the development of an array of prediction models. It relies on independent variables and can provide the prediction for the dependent variable. The paper outlines the development of a Regression model to get the depression score of a person based on the music the user listens to. A regression model is used to predict the depression score depending upon the data obtained from a varied span of individuals and the genre of music they have listened to. We generate a suitable report based on the depression score. The doctor can then use the report to give the necessary treatment to the depressed patient. With our research, we have obtained variance and r2 score of over 0.95. **Keywords:** Multivariate Linear Regression, Music, Principal Component Analysis, Support Vector Regression.	**83-86**
17.	**Authors** — **Nagaraj Aiholli, Uday Wali , Rashmi Rachh** **Paper Title** — **Implementation of Arithmetic unit for RNS using 2^n-3 as Base**	
	Abstract: Residue Number System (RNS) is often used in Cryptographic applications. Choice of a unique base for RNS is an important factor in implementing RNS. Bit folding after multiplication is a commonly used method for implementing RNS. In this paper an architecture based on modulo 2^n-3 arithmetic is implemented. Each word of partial product is mapped once normal and then with one bit left shift with reference to the base number. The results are tabulated in terms of delay and area with Xilinx tool. Efficiency of implementation is compared with results available in literature. **Keywords:** Modulo Arithmetic, Residue Number System, Squarer.	**87-90**
18.	**Authors** — **Priyanka G, Rachana J , Vijayalakshmi N, Abhisheka G S, Vinutha D C** **Paper Title** — **IoT Door Lock Security System Using Google Assistance**	
	Abstract: Nowadays security is the most common problem in door locking system. Anyone can break the door using hard objects and make a robbery of the home, offices and any other properties. This can lead to huge loss for the human economy. In this paper we are proposing a model, in which we used to lock and open the entryway utilizing the google help over the voice and stun IoT board and stun IoT application. The existing system rely on microcontroller, Global System for Mobile (GSM), GPS (Global Positioning System), various sensors, programming like MATLAB, biometric face affirmation, Iris scanner, RFID (Radio frequency identification) technology [6], smart card and mystery express etc. In a colossal fragment of frameworks, Short Message Service (SMS) approach is utilized for correspondence so the structure, it requires some test to pass on message. **Keywords:** Security, face confirmation, RFID, Smart Card and secret express.	**91-93**
19.	**Authors** — **Shilpa V, Vidya A, S N Chandrashekara** **Paper Title** — **Study on Tools Used in IoT Development Life Cycle**	
	Abstract: Internet of thing is an entity of the physical or virtual object, which is able to identified as well as integrated into communication system. Managing the Internet of Things is called as Web of Things. The IoT gadgets are rooted with sensors, gateways, Internet	**94-99**

	connectivity and cloud. Also using these gadgets, we can converse with other devices through Internet for secured communication. Growth of IoT can be seen extremely fast in our present life. It is acknowledged that by 2020 thousands of billions of objects will be deployed globally. We trust to facilitate IoT as software-driven, therefore utility requirements resolve the modernization as well as improvement towards IoT. Primary domains identified are energy transportation, distribution, smart town, smart communication, smart domestic, atmosphere, supply chain, as well as fitness care. This study presents open source tools used in IoT development life cycle. The expression open source was mainly associated to infrastructure software, where we can improve the code re-usability rather than the implemention using web of objects. **Keywords:** AMQP, CoAP, IoT, JSON, Node-RED, VSCP	
20.	**Authors**	**D C Vinutha, G T Raju**
	Paper Title	**Task Selection for Scheduling Using Hadoop Scheduler**
	Abstract: MapReduce is a prevalent model for data intensive applications. This covers the difficulties of parallel programming and provides an abstract environment. Hadoop is a benchmark for Big Data storage by being able to provide load balancing, scalable and fault tolerance operation. Hadoop output is mainly dependent on scheduler. Various algorithms for scheduling [6-10] have been suggested for various types of environments, applications and workload. In this work new task selection method is developed to facilitate the scheduler, if a node has several local tasks. Experimental result shows an improvement of 20% in respect of locality and fairness. **Keywords:** Map Reduce, Hadoop Fair Scheduler, LATE.	**100-102**
21.	**Authors**	**Vijaykumar M, Vishnu Shivalingappa Toragall, Gagana P Rao, Kavya G V, Vinutha D C**
	Paper Title	**IoT Based Flow Valve Control and Accounting System**
	Abstract: The most important and necessary factor for all living individuals in the present world is water. Drinking water utilization suffers from many problems or difficulties in real-time execution. Nowadays, due to increasing population providing drinking water facilities to everywhere is a big challenge resulted in insufficiency of water. Water contamination is the main cause for scarcity of water. The main reasons for water pollution are use of pesticides, chemical fertilizers and Industrialization. Due to this, Water gets contaminated and it causes severe problems like waterborne infections to individual lives and it also hazardous to aquatic life. Due to all this there is need for water quality checking in specific duration of time or regularly. Parameters that are to be checked to assess the water quality are Temperature, pH, turbidity and Salinity. Based on the measurement obtained about the parameter the water usage will be decided **Keywords:** Temperature, PH, Turbidity, Salinity	**103-106**
22.	**Authors**	**Pulkit Singh, Piyush Modi, Bibhudendra Acharya, Rahul Kumar Chaurasiya**
	Paper Title	**Energy-Efficient and High-throughput Implementations of Lightweight Block Cipher**
	Abstract: Security in resource-constrained devices has drawn the great attentions to researchers in recent years. To make secure transmission of critical information in such devices, lightweight cryptography algorithms come in light to large extend. KLEIN has been popular lightweight block cipher used to overcome such issues. In this paper, different architectures of KLEIN block cipher are presented. One of designs enhances the efficiency with regard to the throughput at the expense of a larger area. In order to make such designs, the pipelined registers are placed on different positions in datapath algorithm. The proposed design transforms the data input to protected output with the speed of 2414.13 Mbps for xc5vlx50t-3ff1136 device. In addition, the second design implementation completes either one or more than one round in only one clock and gives energy-efficient and high throughput implementations. Due to this, a trade-off between area and speed can be analyzed for high-speed applications. Moreover, this proposed design shows that with increasing the area of cipher implementation results in more	**107-113**

	transformation of plaintext into ciphertext. All results are verified and simulated for various families of Xilinx ISE design suite. **Keywords:** FPGA, KLEIN cipher, Lightweight algorithm, Throughput, Resource-constrained environments, Security, Symmetric encryption.	
23.	**Authors** | **B R Vatsala, Dr C Vidya Raj** **Paper Title** | **Performance Analysis of Internet of Things using Visible Light Communication** **Abstract:** Internet of Things enables seamless interaction between connected devices. The growing popularity of IoT will increase the number of sensors and devices to be connected with Internet enormously, resulting in generation of Trillions of GBs of data. Most of the IoT devices have very less storage capacity and hence data generated are to be transmitted to IoT node head which takes care of processing. Data generated from ECG devices, Video surveillance systems are very large requiring a physical medium with high bandwidth for the connection between device and IoT node head. Further the objects plugged into Internet are most of the times powered by batteries requiring low power communication. Visible Light Communication (VLC) is one such technology that provides wide bandwidth up to 10Gbps with energy efficiency and thus it can be a potential solution for the above problem. In this paper we propose NS3 based IoT implementation using existing IoT protocol stack with Visible Light Communication as the physical medium considering error model. We achieve a throughput of 416 Mbps which is a significant improvement over Wireless Fidelity based IoT implementation which has a throughput of 91.2 Mbps under the same condition. **Keywords:** Internet of Things, NS3 Network Simulator, Visible Light Communication, WiFi	**114-117**
24.	**Authors** | **Naresh Patel K M, Dr. Kiran P** **Paper Title** | **Preprocessing Methods for Unstructured Healthcare Text Data** **Abstract:** At present, the amount unstructured text data is increasing exponentially from the past periodically. Information retrieval (IR) from these unstructured text data is challenging. As the data users foresee for particular/specific outcomes. Retrieval of the significant outcomes depends on the fashion, how they are associated/indexed. Unstructured text data like clinical data containing more health information requires challenging preprocessing methods, which also help to reduce the size of the dataset so that it will optimize the performance of the IR system. In this paper, we have proposed the pre-processing methods such as Data collection, Data Cleaning, Tokenization, Stemming, Removal of Stop words which will efficiently help the data users to find the specific patterns from the unstructured text data. **Keywords:** Information Retrieval (IR), Tokenization, Stemming, Stop words, Unstructured Text Data.	**118-123**
25.	**Authors** | **Pragati Mynampati, Ms. Medha Gourayya, Dr Shashidhara H R** **Paper Title** | **Implementation of UIDAI Aadhar Enrollment System with P2P Blockchain Technologies** **Abstract:** Blockchain technologies are becoming more popular in securing the sensitive data such as government holding citizens' s wealth, health and personal information. A blockchain is a shared encrypted data of records, consisting of a ledger of transactions. As the data stored in blockchain is tamper proof, it is proposed to implement new Aadhar enrolments with P2P Blockchains and migrate the existing centralized Aadhar personnel's personal data from the conventional RDBMS / Big data system repositories to distributed ledger technologies by creating private blockchains. In this paper, we will discuss how to provide security for Aadhar card enrolment data using blockchain architectures. A blockchain-based Aadhaar would help UIDAI in truly complying with the data protection and privacy stipulations outlined in the Right to Privacy Act judgment **Keywords:** Aadhar, Distributed Ledger Technologies, P2P Blockchains, UIDAI.	**124-127**
26.	**Authors** | **Zeesha Mishra, Shubham Mishra, Bibhudendra Acharya**	

	Paper Title	**LEA 192: High SpeedArchitecture of Lightweight Block Cipher**	
	Abstract: High-throughput lightweight cryptography calculation is the need of the present world to convey between two asset obliged devices Pipelining is the technique have been used to achieve high throughput. In this paper we have target to lightweight block cipher LEA. Block size of LEA is 128 and key size 128, 192, and 256 bit. In this paper we have focus on LEA architecture for 192- bit key size and achieve very good throughput. This method has a higher capability of throughput as compared to previous LEA ciphers. Proposed work is 56% improved version of compared paper for respective Speed and area also less than previous architecture. Graph representation have been shown of different matrices and comparison. **Keywords:** ARX, Block Cipher, Cryptography, LEA, Lightweight, Pipeline, Throughput.		**128-132**
27.	**Authors**	**Pronika, S S Tyagi**	
	Paper Title	**Deduplication in Cloud Storage**	
	Abstract: Cloud Computing is well known today on account of enormous measure of data storage and quick access of information over the system. It gives an individual client boundless extra space, accessibility and openness of information whenever at anyplace. Cloud service provider can boost information storage by incorporating data deduplication into cloud storage, despite the fact that information deduplication removes excess information and reproduced information happens in cloud environment. This paper presents a literature survey alongside different deduplication procedures that have been based on cloud information storage. To all the more likely guarantee secure deduplication in cloud, this paper examines file level data deduplication and block level data deduplication **Keywords:** Cloud Computing, Data Deduplication, Data Storage, Security.		**133-138**
28.	**Authors**	**Monika P, G T Raju**	
	Paper Title	**Integration of Healthcare Domain Ontologies using Bayesian Networks**	
	Abstract: Semantic Web (SW) was created with the vision of knowledge sharing. Knowledge from the past and present help predict the future with the use of Machine Learning (ML) algorithms. SW powered with ontologies help in realizing machine interactions supporting automated knowledge extraction. Healthcare as a field of medical domain gives lot of importance for timely accurate decisions with the available features. Representing existing information in terms of ontologies, retrieving the decisions upon establishing interaction between the relevant ontologies within the same domain, knowledge sharing & reusing the existing facts are of great benefit to the medical practitioners and researchers which has lot of open challenges to be resolved in order to realize the same. To address the stated issues, an algorithmic approach – Ontologies Integration algorithm using Bayesian Networks (OIBN) based on Bayesian Belief Networks (BBN) working on Naïve beliefs has been proposed which works on symptoms through the attributes of related ontologies within the same domain exploring the symptom dependencies and their probability of occurrences in combination. Selection of features for integration will follow the steps proposed in Sequential Forward Feature Selection algorithm (SFFS). The observation on the correctness of the presented method over diabetic datasets represented in ontological form with integration of relevant features reveals that the knowledge graphs have been efficiently explored discovering the facts based on the probability theory. The experimental results conclude that the proposed technique is showing enhanced prediction accuracy of 80.95% which is better compared to accuracies of the individual ontologies prior to integration and existing state-of-art technique. **Keywords:** Semantic web, Ontologies, Ontology agents, Ontologies Integration, Health care, Diabetology, Domains. .		**139-145**
29.	**Authors**	**Midhush Manohar T K., Naveen Suresh, Srikumar Subramanian, Gowri Srinivasa**	
	Paper Title	**Hybrid Models for Adaptive Allocation of Electricity for Households**	

	Abstract: In this paper, we analyze, model, predict and cluster Global Active Power, i.e., a time series data obtained at one minute intervals from electricity sensors of a household. We analyze changes in seasonality and trends to model the data. We then compare various forecasting methods such as SARIMA and LSTM to forecast sensor data for the household and combine them to achieve a hybrid model that captures nonlinear variations better than either SARIMA or LSTM used in isolation. Finally, we cluster slices of time series data effectively using a novel clustering algorithm that is a combination of density-based and centroid-based approaches, to discover relevant subtle clusters from sensor data. Our experiments have yielded meaningful insights from the data at both a micro, day-to-day granularity, as well as a macro, weekly to monthly granularity. **Keywords:** Time series, Forecasting, SARIMA, LSTM, RNN, Clustering.	**146-153**
30.	**Authors**	**Sunita T N, Bharathi Malakreddy A**
	Paper Title	**Recent Advancement of Auto-Scaling in LTE M2M Communication.**
	Abstract: Lately Machine to Machine (M2M) Communication has gathered huge research interest because of its peculiar nature of communication without any or less human intervention. With the increase in wide variety of devices and application, there is huge change in traffic patterns of Machine Type Communication (MTC) system. Existing traditional Long-Term Evolution (LTE) network will not be able to handle these growing demands of the bandwidth and network availability. There are some challenges in the existing network like latency, scalability, reliability, interference and delay, which degrade the Quality of Service (QoS). Hence to address these issues would require some advanced network resource management capabilities such as Network Functions Virtualization (NFV), Software Defined Networking (SDN). These technologies would help the operators to provide efficient services to consumer. In this literature we present survey of auto-scaling the resources required for LTE communication using SDN, NFV and Machine Learning (ML) for facilitating MTC, along with its requirements, existing work and challenges. This paper first describes in brief about SDN/NFV and its limitations. Then review the existing work and their applicability to MTC along with open problems and finally some future research in this area. **Keywords:** Auto-Scaling, Machine to Machine, SDN, NFV, Machine Learning.	**154-160**
31.	**Authors**	**Rashmi G, S Sathish Kumar**
	Paper Title	**Prediction of Solid Garbage Waste Generation in Smart Cities using Naive Bayes Algorithm**
	Abstract: Smart cities which are becoming overcrowded today are making human beings life miserable and prone to more challenges on daily basis. Overcrowded is leading to vast generation of wastes contributing to air pollution and in turn is affecting health causing various diseases. Even though various measures are taken to recycle wastes, the rate at which it is being produced is becoming higher and higher. This paper deals with prediction of waste generation using Naïve Bayes machine learning algorithm(Classifier) based on the statistics of previous waste datasets. The datasets used for the future prediction are obtained from reliable sources. The implementation of the algorithm is done in Pyspark using Anaconda Jupyter. The performance of the classifier on the datasets is analyzed with confusion matrix and accuracy metric is used to measure the performance of the classifier. The accuracy obtained indicates that algorithm can be effectively used for real time prediction and it gives more accurate results for huge input datasets based on independence assumption. **Keywords:** Machine Learning, Big Data, Naïve Bayes Classifier, PySpark, Solid Garbage Waste	**161-164**
32.	**Authors**	**Kiran J Waghmare, Dr Reeja S R**
	Paper Title	**A Computational Intelligence Paradigm with Human Computer Interface Learning**
	Abstract: The cognitive Science is the leading technology which works on the principle of Neuroscience. Human Computer Interface is a challenging approach in neurosciences, which is the leading method to handle the brain activities to control external communications with the electronic devices for physically challenged human beings. The various HCI applications are developed with this advance technology. This helps in various patients which are physically	**165-171**

	challenged or facing the lock in syndrome, a condition where limbs are not functioning to full extent. Therefore, this paper is the review paper to the various EEG signal classification techniques using different taxonomy with techniques like linear, nonlinear, stable-ubstable, static-discriminant to design various HCI applications. **Keywords:** Human Computer Interface; learning; brain activity; signal pattern; classification	
33.	**Authors**	**Rohit Ningappai Padti, Shashank H G, Syed Azam H S, Vignesh Pai, Ramesh B**
	Paper Title	**Machine Learning Based Twitter Sentimental Analysis in Business Field**
	Abstract: Social networking sites like twitter have millions of people share their thoughts day by day as tweets. This paper addresses the problem of sentiment analysis in twitter; that is classifying tweets according to the sentiment expressed in them: positive, negative or neutral. Twitter is an online micro-blogging and social-networking platform which allows users to write short status updates of maximum length 140 characters. It is a rapidly expanding service with over 200 million registered users, out of which 100 million are active users and half of them log on twitter on a daily basis - generating nearly 250 million tweets per day. Due to this large amount of usage we hope to achieve a reflection of public sentiment by analyzing the sentiments expressed in the tweets. Analyzing the public sentiment is important for many applications such as firms trying to find out the response of their products in the market, predicting political elections and predicting socioeconomic phenomena like stock exchange. The project is to develop a functional classifier for accurate and automatic sentiment classification of an unknown tweet stream. **Keywords:** sentiment analysis, micro-blogging, socioe-conomic.	**172-179**
34.	**Authors**	**Sapna V M, Roshan Makam, Keshava M, Sudhanva Narayna**
	Paper Title	**Conceptual Framework for Invariant Protein Fragment Library**
	Abstract: Proteins are essential and are present in all life forms and determining its structure is cumbersome, laborious and time consuming. Hence, over 3-4 decades, researchers have been using computational techniques such as template and template free based protein structure prediction from its sequence. This research focuses on developing a conceptual basis for establishing an invariant fragment library which can be used for protein structure prediction. Based on 20 amino acids, fragments can be classified into lengths of 3 to 41 size. Further, they can be classified based on the identical number of amino acids present in the fragment. This encompasses theoretically the number of fragments that can exist and in no way represent the actual possible fragments that can exist in nature. Invariant fragments are ones which are rigid in structure 3-dimensionally and do not change. A formula was arrived at to determine all possible permutations that can exist for length 3 to 41 based on the 20 amino acids. 100 proteins from the Protein Data Bank were downloaded, broken into fragments of 3 to 41 resulting in a total of 6102,102 fragments using Asynchronous Distributed Processing. Then identical fragments in sequence were superimposed and Root Mean Square Deviation (RMSD) values were obtained resulting in roughly 3.2% of the original framgnets. t-score and z-scores were obtained from which Skewness, Kurtosis and Excess Kurtosis were determined. For invariance, skewness cutoff was set at + 0.1 and using the excess kurtosis, fragments whose distribution were either leptokurtic or platykurtic and were within + 1 standard deviation of the mean value were considered as invariant i.e., if there were no outliers in the distribution and if most of the t-score or z-score values were centered around its average value. Using these cutoff values, fragments were classified and deposited into an invariant fragment library. Roughly 3,81,799 invariant fragments were obtained which is roughly 6.3% of the total number of initial fragments. This would be way less than the number of fragments that one has to either use in homology or de-novo modelling thereby reducing the design space. Further work is underway to set up the entire invariant fragment library which can then be used to predict protein structure by template-based approach. **Keywords:** Proteins, Fragments, Invariant, Library	**180-187**
35.	**Authors**	**Mr. Ramesh K V, Dr. G T Raju**

	Paper Title	**Cloud Security: Inter-Host Docker Container Communication using Vault Dynamic Secrets**	
	Abstract: In this paper we attempt to address Inter-Host Docker container communications security issues by incorporating a latest approach provided by Vault Hashicorp dynamic secret mechanism for managing SSH keys and server credentials. A simulation environment is prepared for Inter-Host container communication consisting of one host running locally and the peer host running as an AWS EC2 instance in cloud. Industry standard monitoring tool Grafana is used in the simulation environment to highlight the security impacts for any organization. We also draw special attention to some of the security vulnerabilities in docker container like ARP spoofing, Integrity of the docker host and containers and MAC flooding attacks. We try to list some best practices to be followed when using docker containers in any production deployments **Keywords:** Docker containers, Dynamic secrets, Grafana, Cloud Security, Vault Hashicorp		**188-195**
36.	**Authors**	**Anagha Naga Krishna, Tejashwini V, Dr. Sudhamani M J**	
	Paper Title	**Diagnosis of Brain Diseases using Neural Networks**	
	Abstract: Intensification in the occurrence of brain diseases and the need for the initial diagnosis for ailments like Tumor, Alzheimer's, Epilepsy and Parkinson's has riveted the attention of researchers. Machine learning practices, specifically deep learning, is considered as a beneficial diagnostic tool. Deep learning approaches to neuroimaging will assist computer-aided analysis of neurological diseases. Feature extraction of neuroimages carried out using Artificial Neural Networks leads to better diagnoses. In this study, all the brain diseases are revisited to consolidate the methodologies carried out by various authors in the literature **Keywords:** Brain, Classification, Feature Extraction, Neural network		**196-202**
37.	**Authors**	**Sudha V, Girijamma H A**	
	Paper Title	**Modeling a Gene Structure Behavior Analysis based on the Correlation Ontology**	
	Abstract: The ever increasing digitization and advancement in the medical filed provides data especially related to gene structure and computing models gives an opportunity to analyses those data for the more critical classifications and analysis to provide practitioner a better decision-making platform to advice proper treatment. The subtype classification is a challenging task if it is handled only by the computer vision methods, whereas if the low-level relationship is established and structure of the gene profile is understood then the statistical methods are quite useful and effective for the sub-type doses classifications. This paper presents a process of analyzing the gene structure and its correlations among the node behavior analysis by modeling it at the numerical computing platform. Various performance metrics like p-score and t-test is conducted to get the optimal performance factor. The proposed methods can be extended to the further critical computations in advanced models and get the analysis of typical gene profile structure behaviors and used as an effective classifier for the sub-type classifier of the various type of doses sub-cluster. The computational analysis shows significant improvement (50%) in type-1 and type-2 gene expression analysis **Keywords:** Biomedical, Gene Structure, Gene Ontology, Clustering Support Vector Machine.		**203-208**
38.	**Authors**	**Lakshmi K N, Divya G, Devika S P, Yogesh H S, Megha V**	
	Paper Title	**A Design on Bank Customer Complaints Analysis Using Natural Language Processing**	
	Abstract: The banking sector has undergone a major revolution with the advent of digital transformation. The entry of Fintech and tech giants such as Google, Amazon, and Facebook have introduced convenient banking that is easy to understand and use. In this focused condition, banks are understanding the significance of client care and fulfillment and need to give close consideration to the Voice of Customer to improve client experience. By dissecting and getting bits of knowledge from client input, banks will have better data to settle on key choices. In their quest to better understand their customers, banks are seeking artificial intelligence (AI) solutions in the form the of sentiment analysis. What is sentiment analysis? In simple words, sentiment analysis is the process of detecting a customer's reaction to a product, brand, situation or event through texts, posts, reviews, and other digital content. Using sentiment analysis,		**209-213**

	business leaders can gain deep insight into how their customers think and feel. The analysis can help in tracking customer opinions over a period of time, determine customer segmentation, plan product improvements, prioritize customer service issues, and many more business use cases. **Keywords:** Artificial Intelligence(AI), Finetech and tech giants, Sentimental analysis;	
39.	**Authors**	**Sayan Sikder, Sanjeev Kumar Metya, Rajat Subhra Goswami**
	Paper Title	**Exception Included, Ordered Rule Induction from the Set of Exemplars (ExIORISE)**
	Abstract An expert system is one which uses collection of data comprising the knowledge to offer guidance or make inferences. Its work in most cases can be seen as classification which is basically the task of assigning objects to different categories or classes, determined by the properties of those objects. Numerous research works have been and being done to develop efficient knowledge acquisition techniques for expert systems. Some state-of-the-art algorithms are great performers but need extensive learning whereas older rule / decision- tree based algorithms perform pretty well with small data sets. Moreover, co-existence of learners of different levels of expertise and accuracy is believed to be encouraged to achieve a cumulative intelligence just like the human beings have. RISE is one such algorithm that infuses both instance-based learning and rule induction. It proved to be quite efficient handling binary and multi-class classification problems for small data sets in terms of accuracy and cost as well. In this work, features like exclusion of inefficient rules, inclusion of exceptions in the rule set and ordering of the rules using weights beforehand are integrated with the classical RISE algorithm to develop a more efficient classifier system named as ExIORISE. Empirical study shows that ExIORISE outperforms RISE, C4.5 and CN2 significantly. **Keywords:** Classification, expert system, rule / decision-tree based algorithms, exceptions; inefficient rules, ordering according to weight.	**214-219**
40.	**Authors**	**Srishti C Rai, Sheetal Vernekar, Ajay L Gowda, Nishith A, Prathima Anand**
	Paper Title	**Mood Mechanic**
	Abstract: Depression is a major problem being faced by a lot of people. It is the extremely low mood faced by an individual. Some cope up with this mood change very quickly but some drastically fall into it. Those who fall into it suffer from depression. Prediction of a person's mood plays a major role in treatment of depression. But predicting a person's mood from previously collected data is challenging. Mood of a person can depend on various factors such body language, facial expressions and current mind state. But mood prediction is not enough, instead the proposed system involves ways in which we can use the predicted data to provide assistance in case of any deviation from a healthy mental condition. Past approaches being used, predict mood considering only a few parameters. This can lead to results being less accurate making it less reliable. A lot of these issues can be handled by the 'Mood Mechanic' approach. This paper mainly emphasizes on the existing approaches related to mood prediction and their limitations so as to propose a system that would not only help in efficient prediction but also help in assisting the user of the system on the further actions to be taken based on the predicted results. This approach considers many parameters such as facial expressions, social media usage and self-evaluation results. On collecting all these data and performing analysis on them, the system will suggest the actions or solutions, which will help the person in deciding on tasks which are generally suggested and are necessary for getting better. **Keywords:** Depression, Mood prediction, Mental wellbeing, Sentimental analysis.	**220-224**
41.	**Authors**	**Patil N S, Dr Kiran P , Preethi B**
	Paper Title	**A Computational Modeling for Knowledge Binding of the Unstructured Web Data**
	Abstract: The focus of this manuscript is laid towards extracting insightful data embedded into web-based information which is crucial for various academic and commercialized application requirements. The study thereby introduces a robust computational modeling by means of computing knowledge from collaborative web-based unstructured information. For this purpose, this design is simplified with Fuzzy based matching algorithm and also with a set	**225-232**

	of procedures which reduces the computational effort to a significant extent. The numerical theoretical analysis shows that the effectiveness of the formulated model. It also shows that the formulated concept outperforms the baseline modeling by almost 50% when computational performance is concerned. **Keywords:** Unstructured web-data, Fuzzy Logic, Information Mining	
42.	**Authors** | **N P Samarth, Gowtham V Bhat, Mrs. Hema N** **Paper Title** | **Stock Price Prediction** **Abstract:** Stock trading is a very crucial activity in the world of Finance and is a supporting structure for many companies. Predicting the future value of a stock is the main goal of stock price prediction project. In this paper, we have used machine learning algorithms to predict future stock prices of a company. Stock prediction by the stock brokers is mainly done using the time series or the technical and fundamental analysis but as these techniques are very unreliable and limited, we propose making use of intelligent techniques such as machine learning. Python is a programming language which can be used to implement machine learning algorithms with its numerous inbuilt libraries. We propose an approach that uses machine learning algorithms and will be trained on the historical stock data that is available and gain intelligence, later it uses the knowledge acquired for predicting the stock prices accurately. Random Forest Regression is one of the machine learning technique that is used for stock price prediction for small and large capitalizations also in different markets employing both up-to-minute and daily frequencies. **Keywords:** Machine Learning, Random Forest Regression, Stock Market, Predictions.	**233-237**
43.	**Authors** | **Ch Sai Abhishek, Ketaki V Patil, P Yuktha, Meghana K S, Dr. M V Sudhamani** **Paper Title** | **Predictive Analysis of IPL Match Winner Using Machine Learning Techniques** **Abstract:** Artificial intelligence (AI) can be implemented using Machine Learning which allows the computing to potentially robotically study and improve from its previous experiences without being manually typed. Data can be accessed and used by the computer programs developed using Machine learning. This paper mainly focused on implementation of machine learning in the arena of sports to predict the captivating team of an IPL match. Cricket is a popular uncertain sport, particularly the T-20 format, there's a possibility of the complete game play to change with the effect of any single over. Millions of spectators watch the Indian Premier League (IPL) every year, hence it becomes a real-time problem to compose a technique that will forecast the conclusion of matches. Many aspects and features determine the result of a cricket match each of which has a weighted impact on the result of a T20 cricket match. This paper describes all those features in detail. A multivariate regression-based approach is proposed to measure the team's points in the league. The past performance of every team determines its probability of winning a match against a particular opponent. Finally, a set of seven factors or attributes is identified that can be used for predicting the IPL match winner. Various machine learning models were trained and used to perform within the time lapse between the toss and initiation of the match, to predict the winner. The performance of the model developed are evaluated with various classification techniques where Random Forest and Decision Tree have given good results. **Keywords:** Cricket prediction, Decision Trees, KNN, Logistic Regression, Multivariate Regression, Random forest, SVM, Sports Analysis.	**238-243**
44.	**Authors** | **Kavyashree B S, Navarathna M, Samyak V Jain, Vignesh N, Prof. Vidyashree K P** **Paper Title** | **Virtual Fences** **Abstract:** In modern world, human-animal conflict has caused hindrance for wildlife conservation and protection of human settlements. A search for effective protection systems have been proposed and re-proposed every passing day. Until now, wild animal identification and repelling systems have been created using Camera Surveillance, infrared and thermal sensors, LVDT, Geophones and Acoustic sensors. As these methods are very expensive and less accurate, an automated system for identification of human intruders and wild animals	**244-247**

	(Elephants and wild-boars) and a repelling alarm system is introduced in this project wherein the human-wildlife conflict can be reduced to a large extent. In this method, an amalgamation of three layers are deployed to identify the presence of animals. The first outer layer detects the movement with the help of a PIR (passive infrared detector) sensors and gives the warning signal to alert the people around that area using GSM as well as triggers the image detection part of the system. Middle layer activates the initial repelling system to make the animals realize that it is in a human habitat and to make them run back to the forest by triggering an alarm system of high frequency noise. In case if it is a human being trespassing into the farmland, a GSM model is used to send an alert text to the owner of the plot, informing him of the presence of an intruder. If the animals are still moving forward towards the conserved area, the third layer activates the second repelling system wherein, the alarm is produced through high-amplitude speakers along with high intensity search lights and fog dispensers. As the speakers and search lights are installed in patterns the entire attack susceptible area is covered, which reduces manual monitoring of the system. This system also holds good for identification and alerting when a human being trespasses the covered area, with intentions of causing theft or damage to the property. **Keywords:** Alarm system, intruder detection, animal detection, repelling system, virtual fences.	
45.	**Authors**	**Maithri C, Dr. Chandramouli H**
	Paper Title	**Implementation of Parallelized K-means and K-Medoids++ Clustering Algorithms on Hadoop Map Reduce Framework**
	Abstract: The electronic information from online newspapers, journals, conference proceedings website pages and emails are growing rapidly which are generating huge amount of data. Data grouping has been gotten impressive consideration in numerous applications. The size of data is raised exponentially due to the advancement of innovation and development, makes clustering of vast size of information, a challenging issue. With the end goal to manage the issue, numerous scientists endeavor to outline productive parallel clustering representations to be needed in algorithms of hadoop. In this paper, we show the implementation of parallelized K-Means and parallelized K-Medoids algorithms for clustering a large data objects file based on MapReduce for grouping huge information. The proposed algorithms combine initialization algorithm with Map Reduce framework to reduce the number of iterations and it can scale well with the commodity hardware as the efficient process for large dataset processing. The outcome of this paper shows the implementation of each algorithms. **Keywords:** Big Data, Clustering algorithms, Hadoop, K-means, K-Medoids, K-Medoids++, MapReduce.	**248-253**
46.	**Authors**	**Chandan A, Ajay Umakanth, Adarsh N, Dr. Girijamma H A.**
	Paper Title	**Deep Learning Approach for Psychological State Diagnosis.**
	Abstract: Psychological State or Depression is a looming mental health problem in the society. This, negatively affects many families, relationships, jobs. But to provide effective treatment, there is no awareness about this. Most people do not give much thought to this as they do to physical problems due to reasons which include that they are shy, afraid or negligent about this. A feasible solution to this is to create awareness about this so that people can actively seek out help and just not choose to suffer in silence. This paper proposes an approach to detect psychological state or depression in people using mainly non-verbal and involuntary cues with the help of a standard questionnaire. The subject wears the MindWave device by NeuroSky and pairs it with a smartphone. Then a standard questionnaire is answered during which the data on brain waves and emotions are collected simultaneously by MindWave and the smartphone camera respectively. The data collected is then used to train a model that will give a score pertaining to the severity of depression in a person, thus aiming to give a better accuracy compared to all the devices present. **Keywords:** Brainwaves, Depression Detection, Diagnosis, Emotion, NeuroSky, PHQ-9	**254-258**
47.	**Authors**	**Dr. Mallikarjun H M, Akshay Chhetri, Apoorva G S, Gowri Jadhav, Sheetal B V**

	Paper Title	**Depression Predictor Model for Farmers Using Machine Learning Techniques**	
	Abstract: There are a few disorders that are the outcome of unbalanced mental state. A very basic one is depression. Depression is a very serious yet common mental ailment that damagingly distresses how a person thinks or feels or acts. Side effects of physical injuries are obvious and regularly agonizing, because of which they are recognized and paid attention to. Symptoms of mental illnesses are not very comprehendible. A lot of individuals don't know about them, including the people who are suffering. This research paper proposes a methodology with an approach to machine learning in order to categorize the subject into 4 distinguished levels of depression, namely normal, mildly depressed, moderately depressed and severely depressed. This procedure is proposed to be carried out using PHQ-9 and DASS-21 questionnaire and the electric EEG bands Alpha, Beta, Delta, Gamma and Theta variations will be obtained via the usage of head kit Neurosky's Mindwave aid. **Keywords:** PHQ-9, DASS-21, EEG, SVM		**259-262**
48.	**Authors**	**Laxmidevi Noolvi, Hema N, Dr. M.V. Sudhamni**	
	Paper Title	**Evaluation of Object Segmentation Techniques for Object Based Image Retrieval**	
	Abstract: Objects relates more to human perception than any other attributes of an image. Image segmentation is a significant image processing technique to get the objects from complex image background. This work evaluates the techniques of segmentation from basic global thresholding, edge based methods up to the advanced techniques such as K-means, Active Contour Model (Snakes) segmentation approaches. Later, results are post processed with the help of morphological operations and make them suitable for object based image retrieval. It also provides the comparative analysis and empirical evaluation of performance of the proposed modified segmentation approaches. **Keywords:** OBIR, image segmentation, active contours, K-means image segmentation.		**263-267**
49.	**Authors**	**Laxmidevi Noolvi, Dr. M. V. Sudhamni**	
	Paper Title	**Object Based Image Retrieval from a Repository**	
	Abstract: Today is a digital world. Due to the increase in imaging system, digital storage capacity and internetworking technology Content Based Retrieval of Images (CBIR) has become a vibrant research spot. The CBIR systems helps user to browse and retrieve similar kind of images from huge databases and World Wide Web. The Object based Image Retrieval (OBIR) Systems are the extension to the CBIR technique where it retrieves the similar images based on the object properties. So far massive amount of work has been done in this field of research. A plenty of the techniques and algorithms are published in the different papers. This paper provides brief survey on basic and recent approaches and techniques explained in different papers. **Keywords:** CBIR, OBIR, Features, Semantic gap, Similarity Measures.		**268-272**
50.	**Authors**	**Hema N, Dr. M V Sudhamani**	
	Paper Title	**Segmentation of Liver from CT Abdominal Images**	
	Abstract: Automatic segmentation of liver from the abdominal Computed Tomography images is a difficult task. It is very important to segment the liver accurately, so the tumors can be located, detected and classified accurately within a liver. The proposed segmentation methods include preprocessing stage as first step where image resizing and grayscale conversion is performed. Thresholding technique is applied to obtain a binary image. Next, liver is segmented from 2-D abdominal CT scanned images using various segmentation methods like adaptive thresholding with morphological operations, global thresholding with morphological operations and Watershed gradient transform. Next, Active contour balloon snake model is applied on 3-D dataset 3D-IRCADb (3D Image Reconstruction for Comparison of Algorithm Database). The empirical comparative study is carried out using JSC, DSC, sensitivity, specificity and accuracy and results are tabulated. The empirical comparative study of these methods using Dice and Jaccard Similarity Coefficient is carried out and results are tabulated		**273-280**

	Keywords: Abdominal Computed Tomography, Liver segmentation, Thresholding, Morphological operations, Watershed.	
51.	**Authors** | **Hema N, Laxmidevi Noolvi, Dr. M V Sudhamani** **Paper Title** | **Liver and Tumor Segmentation Techniques for CT Abdominal Images** **Abstract:** Image segmentation is one of the important step in digital image processing where the images are partitioned into different segments based on several properties like brightness, contrast, intensity and texture. Image processing includes several steps among which image segmentation is the difficult task. Accurate segmentation is the fundamental step in digital image processing. Segmentation can be performed manually, but as it is a tedious task, automatic segmentation techniques which gives more accuracy has to be found. Many recent segmentation techniques for liver image segmentation are discussed here. Some of the techniques to segment liver from CT scanned abdominal image and to segment tumor from the liver are discussed. The main objective is to highlight various techniques which can aid in developing a novel segmentation technique. **Keywords:** Abdominal image, Liver, Enhancement, Segmentation, CT scan images.	**281-287**
52.	**Authors** | **Nagashree N, Dr. Premjyoti Patil, Dr. Shantakumar Patil, Mr. Mallikarjun Kokatanur** **Paper Title** | **Performance Metrics to Study the Precision of Segmentation Algorithms in Brain MRI for Early Detection of Autism** **Abstract:** Autism is an abnormal condition of human brain neurons, which makes individuals attention deficient, unable to speak and several other neurodevelopmental disorders as detected in the children with the age group of 2 to 5 years. However, autism is a neurological irregularity with more than one behavioral problem. Autism would be generally detected by behavioral symptoms, but early detection was not possible with behavioral approach. So, studying the structure of brain by using MRI image of the brain would be an efficient technique in early detection of autism. Various image classification and segmentation methods have been developed by many researchers. This work proposes a new performance metrics to find out efficiency of segmentation algorithms. **Keywords:** ASD, Genetic Threshold, K-means, Segmentation.	**288-292**
53.	**Authors** | **R Rajkumar, Dr. M V Sudhamani** **Paper Title** | **Content Based Image Retrieval System using Combination of Color and Shape Features and Siamese Neural Network** **Abstract:** With an advent of technologya huge collection of digital images is formed as repositories on World Wide Web (WWW). The task of searching for similar images in the repository is difficult. In this paper, retrieval of similar images from www is demonstrated with the help of combination of image features as color and shape and then using Siamese neural network which is constructed to the requirement as a novel approach. Here, one-shot learning technique is used to test the Siamese Neural Network model for retrieval performance. Various experiments are conducted with both the methods and results obtained are tabulated. The performance of the system is evaluated with precision parameter and which is found to be high. Also, relative study is made with existing works. **Keywords:** CBIR, Siamese Neural Network, One-shot learning, Color.	**293-299**
54.	**Authors** | **C M Naveen Kumar G Shivakumar** **Paper Title** | **Sensor and Feature Level Fusion of Thermal Image and ECG Signals in recognizing Human Emotions** **Abstract:** Recent studies on recognition of various emotion labels concentrated on speech signals, text, visual images and anatomical variables. The proposed system combines the features of ECG which are extracted using empirical mode decomposition and features of thermal images which are extracted from Gray Level Co-occurrence Matrix (GLCM) viz energy, contrast, homogeneity and correlation. ECG is acquired from AD8232 module and thermal images from FLUKE TiS20. Data of ECG and thermal images are acquired simultaneously from	**300-304**

	a subject and database consists of data from 40 subjects in age group of 20 years to 40 years from Hassan, Karnataka, India. Here different labels of emotions have been classified based on K-nearest neighbor decision rule. This system yielded highest accuracy for disgust and lowest for anger using ECG and highest accuracy for disgust and surprise and least for sad. **Keywords:** Human emotions, electrocardiogram, thermal image, empirical mode decomposition	
55.	**Authors** | **Anuja Kumar Acharya, Rajalakshmi Satapathy , Biswajit Sahoo** **Paper Title** | **Sparse Representation based Multi Object Tracking using GPU**	
	Abstract: This work proposes a sparse based representation for tracking multi object for the longer sequence of video frame. Object of interest are first identified and then represented with set of low dimensional feature covariance matrix. These feature of different object are kept in a dictionary. In order to classify the object, sparse based Orthogonal matching pursuit(OMP) algorithm is used. Furthermore, towards reducing the computational overhead, proposed model is implemented on a graphical processing unit enhanced with the multi threaded resource for parallelization of the task. Experimental results shows that proposed method out perform as compared with the state of art in identifying the objects. **Keywords:** Sparse representation, OMP, Feature Space, GPU, CUDA.	**305-311**
56.	**Authors** | **Shivananda V Seeri, P S Hiremath, J D. Pujari, Prakashgoud Patil** **Paper Title** | **Text Extraction and Recognition in Natural Scene Images using Contourlet Transform and PNN**	
	Abstract: Of late, the rapid development in the technology and multimedia capability in digital cameras and mobile devices has led to ever increasing number of images or multi-media data to the digital world. Particularly, in natural scene images, the text content provides explicit information to understand the semantics of images. Therefore, a system developed for extracting and recognizing texts accurately from natural scene images, in real-time, has significant relevance to numerous applications such as, assistive technology for people with vision impairment, tourist with language barrier, vehicle number plate detection, street signs, advertisement bill boards, robotics, etc. The extraction of the texts from natural scene images is a formidable task due to large variations in character fonts, styles, sizes, text orientations, presence of complex backgrounds and varying light conditions. The main focus of this research paper is to propose a novel hybrid approach for automatic detection, localization, extraction and recognition of text in natural scene images with cluttered background. Firstly, image regions with text are detected using edge features (GLCM) extracted from Contourlet transformed image and SVM (Support Vector Machine) classifier. Secondly, horizontal projection is applied on text regions for segmenting lines and vertical projection is applied on each text line for segmenting characters. The proposed method for text extraction has produced the precision, recall, F-Score and accuracy of 98.50%, 90.85.62%, 95.00%, and 89.90%, respectively. And, these results prove that the proposed method is efficient. Further, the so extracted characters are processed for recognition using contourlet transform and Probabilistic Neural Network (PNN) classifier. The computed features are moment invariants. Only the English script is considered for the experimentation. The proposed character recognition method has accuracy of 79.07%, which is higher in comparison to accuracy of 75.15% obtained by KNN (K-Nearest Neighbors) classifier **Keywords:** Scene Image, Text extraction, Character recognition, Contourlet transform, PNN.	**312-319**
57.	**Authors** | **K P Naveen Reddy, Alekhya T, Sushma Manjula T, Rashmi K** **Paper Title** | **AI Based Attendance Monitoring System**	
	Abstract: Attendance Monitoring System is essential in all organizations for checking the performance of students and it is not easy task to check each and every student is present or not. In all organization attendance are taken manually by calling their register numbers or names and noted in attendance registers issued by the department heads as a proof and in some organizations the students want to sign in these sheets which are stored for future references. This technique is repetitive, complex work and leads to errors as few students regularly sign for	**320-326**

	their absent students or telling proxy attendance of the absent students. This method additionally makes it more complex to track all the student's attendance and difficult to monitoring the individual student attendance in a big classroom atmosphere. In this article, we use are using the technique of utilization face detection and recognition framework to contunisuly recognize students going to class or not and marking their attendance by comparing their faces with database to match and marking attendance. This facial biometric framework takes a picture of a person using camera and contrast that image and compare the image with the image with is stored at the time of enrolment and if it matches marks the attendance and monitor the student performance contunisuly. We may use the concept of artificial intelligence concept to monitor student attendance like capturing the motion pictures of the student when present in class to analyze the student data how much time the student presents in class. **Keywords:** Artificial Intelligence, Student Attendance System, Face reorganization, Students attendance monitoring system and application	
58.	**Authors**	**Dhanush C, Adith Kumar B A, Ajay Umakanth, Ajay Deshpande, Dr. Bhavanishankar K**
	Paper Title	**Smartphone Enabled Counterfeit Note Detection using Siamese Network**
	Abstract: Counterfeit note has a disastrous impact on a country's economy. The circulation of such fake notes not only diminishes the value of genuine note but also results in inflation. The feasible solution to this burning issue is to create awareness about the counterfeit notes among public and to equip them with a technology to detect fake notes on their own. Though there exist numerous research articles on detection of fake notes, they are not handy. The reason for this could be the unavailability or unaffordability in acquiring the equipment for the same. This paper proposes an approach whose implementation can easily be deployed on a smart phone and hence anyone with access to them can use the application to detect the fake notes. The proposed approach consists of the processing phases including image procurement, pre-processing, data augmentation, feature extraction and classification. ₹500 notes are considered for experimentation analysis. Out of 17 distinctive features, 3 such from the obverse side are considered to evaluate the genuineness of the note. Siamese neural network is employed to build a model for effective classification of the notes. The performance of the proposed approach is evaluated at 85% with respect to accuracy. **Keywords:** Contrastive loss, Counterfeit Note, Siamese Network, Smartphone.	**327-333**
59.	**Authors**	**Laxmidevi Noolvi, Dr. M.V. Sudhamni**
	Paper Title	**Object Based Image Retrieval with Segmentation and Extraction of Features using various methods**
	Abstract: This paper proposes Object Based Image Retrieval (OBIR) System with segmenting the objects from the images and then extracting various features from the objects. The objects are the most prominent part of an image which relates more to the human perception. First, the object present in the images is segmented by four different segmentation techniques such as K-means, Active Contours, Edge-Convex hull and Global Thresholding. Later, the color features such as Color Histogram (CH) and Color Coherence Vector (CCV), Texture feature using Local Binary Patterns (LBP) and shape feature using Histogram of Gradients (HOG) are extracted. Finally, with the usage of different segmentation and techniques mentioned above feature are extracted from objects. Results obtained are tabulated and performance study is made. **Keywords:** OBIR, Color histogram, Color Coherence Vector and Local Binary Patterns and Histogram of Gradients.	**334-340**
60.	**Authors**	**Madhukar B N, Bharathi S H., G T Raju, Chetan T Madiwalar, Sachin Munji**
	Paper Title	**A Comparison of the Performance of Median Filter and its Variants for the Preprocessing of Mammilla Cancer Imagery**
	Abstract: This paper presents a comparison of the Median Filter and its variants that are used for the preprocessing of mammilla cancer images in Medical Imaging. Preprocessing of mammilla cancer images is a very important step in their accurate espial. Median filters and its other versions such as Adaptive Median Filter, Progressive Switching Median Filter, and Relaxed Median Filter are applied on a dataset of open source mammilla cancer images for their preprocessing. Their perpetration is compared based on various performance metrics and it's	**341-346**

	inferred that the Relaxed Median Filter outperforms the performance of the other Median Filters used. **Keywords:** Median, Adaptive, Filter, Switching.		
61.	**Authors**	**Keerti Kulkarni , Dr. P A Vijaya**	
	Paper Title	**Parametric Approaches to Multispectral Image Classification using Normalized Difference Vegetation Index**	
	Abstract: The key to proper governance of the municipal bodies lies in knowing the geography of the region. The land cover of the region changes with respect to time. Also, there are seasonal variation in the layout of the waterbodies. Manual verification and surveying of these things becomes very difficult for want of resources. Remote Sensing Images play a very important role in mapping the land cover. In this paper, we consider such remotely sensed Multispectral Images, taken from Landsat-8. Parametric Machine learning algorithm like Maximum Likelihood Classifier has been used on those images to classify the land cover. Normalized Difference Vegetation Index (NDVI) has been calculated and integrates with the classification process. Four basic land covers have been identified for the purpose namely Water, Vegetation, Built-up and Barren soil. The area of study is Bangalore urban region where we find that the water bodies are decreasing day by day. An overall efficiency of 82% with a kappa hat of 0.67 has been achieved with the method. The user and the producer accuracies have also been tabulated in the Results part. The results show the land cover changes in a temporal manner. **Keywords:** Land Cover Classification, Bangalore Urban, Multispectral Landsat Images, Maximum Likelihood Classifier, Normalized Difference Vegetation Index (NDVI).		**347-354**
62.	**Authors**	**Aravinda H L, Dr. M V Sudhamani**	
	Paper Title	**Performance Analysis of Classification of Liver Tumors using Support Vector Machine and Rough Set based Classifiers**	
	Abstract: In recent years the medical diagnosis is majorly done based on the medical images captured using various imaging modalities. The medical doctors and radiologists use these medical images to identify the pathological problems or diseases and suggest the patient about further treatment. In this process, medical doctors and radiologists often prefer to make use of software which can assist in taking the decision. Such an approach is called as Computer Aided Diagnosis (CAD). The CAD systems usually comprise of many phases like segmentation of portion corresponding to a particular organ or region under consideration, detecting the pathology bearing area in that and further classifying into various disease classes. Here, Accuracy of classifiers majorly decides the effectiveness of the diagnosis. In this paper, classification of liver tumors into benign and malignant is considered as a case study. Implementation of two different classifiers namely Support Vector Machine and Rough Set based classifier is carried out using set of features extracted such as Texture features using Average Correction Higher Order Local Autocorrelation Coefficients and shape features using Legendre moments. Comparison of performance of both the classifiers is made and tabulated. Here, Rough Set based classifier has performed better when compared with Support Vector Machine. **Keywords:** Liver tumor, Average Correction Higher Order Local Autocorrelation Coefficients, Legendre Moments, Support Vector Machine Classifier, Rough Set based classifier		**355-359**
63.	**Authors**	**Ashwini Dasare, Harsha S**	
	Paper Title	**CBIR System for Lung Nodule Retrieval and Analysis**	
	Abstract: Lung cancer remains one of the fatal diseases with very high mortality rate in both men and women. Computer aided diagnostic systems have been contributing towards the enhancement of survival rate to a maximum extent. Most of such systems yield binary results, i.e. they classify whether a nodule is benign or malignant and they are computationally expensive. This paper proposes a methodology to build a Content Based Image Retrieval (CBIR) system that provides additional provision to the domain experts. Since the CBIR systems retrieve most similar images, this visual dimension will assist the budding and experience radiologist to assess the nodule information to greater detail. Nine visual and shape features are extracted for each nodule image collected from LIDC database and Minkowski distance measure is used for computing similarity. Experiments are conducted on 750 nodules out of which 375		**360-364**

	are benign and 375 are malignant as identified by domain experts. Precision, recall and F measure metrics are considered to evaluate the methodology with achieved average values of 0.92, 0.82 and 0.86 respectively. **Keywords:** CBIR, nodule, Similarity measure.	
64.	**Authors** — **Rejo Mathew** **Paper Title** — **Contemporary GPS Security Mechanisms** **Abstract:** GPS (Global Positioning System) plays a big role in day to day activities. From navigation to tracking devices, all are dependent on GPS. As the attacks on GPS have increased so the review of GPS security plays a vital role in research. This paper looks at different spoofing generation methods. The idea is to discuss the single antenna, multiple antenna and other factors that are susceptible to interference. Based on the type of vulnerability the solutions are described in detail. This paper focusses on the current anti-jamming and anti-spoofing GPS mechanisms. This paper presents a comprehensive analysis of all the techniques along with the pros and cons of each method. **Keywords:** GPS, Global Positioning System, GPS Security, GPS Anti-Spoofing	**365-371**
65.	**Authors** — **Satyanarayana R , Dr. Shankaraiah** **Paper Title** — **Performance Enhancement of Rectangular Micro Strip Antenna with Different Substrate Materials** **Abstract:** Above 1GHz, Microstrip antenna is extensively used in Wireless communication. The demand of increased wireless communication applications, needs increase in bandwidth, gain and efficiency of microostrip antenna. Microstrip antenna is a low profile antenna but has narrow bandwidth, low gain and efficiency. In this paper amicrostrip antenna is designed with dimensional change technique to improve bandwidth, gain and efficiency. The enhanced performance of proposed design with different dielectric materials designed and are compared with reference Microstrip antenna. A bandwidth enhancement of 230MHz and gain enhancement of 8.4dB are achieved with proposed antenna. **Keywords:** Bandwidth, Gain, HFSS, VSWR, Wireless communication	**372-379**
66.	**Authors** — **Siddhartha Dwivedi, Divya Kumar** **Paper Title** — **Tri-objective NSGA-II Based Approach for Load Balancing** **Abstract:** The rapid rise of virtual machines is affecting the daily lives of people profusely. It is clear that to cater to such huge amounts of requests, servers which can withstand the upper bound of those requests must be maintained. In this paper, we propose a model based on Evolutionary Algorithms which attempts to schedule given tasks to virtual machines in such a manner, so as to minimise the load imbalance among the different machines available. We show that using a greedy approach with certain optimisation functions, a workable solution can be reached which would help reduce this "upper bound" mentioned above. Through it, one can expect the load on any particular machine to not exceed a certain amount and be distributed amongst all virtual machines **Keywords:** Genetic Algorithms, Load Balancing, Makespan, NSGA-II, Virtual Machines	**380-386**
67.	**Authors** — **Nagesha A G, Mahesh G, Gowrishankar** **Paper Title** — **Open Issues in Secure Vertical Handoff Techniques for Next Generation Wireless Networks** **Abstract:** The 4G Wireless Networks (WN) have not only provided seamless connection; they also strive to provide Quality of Service (QoS) to the users. However, providing efficient QoS to the users is quite often challenging due to large number of users and significant traffic load. One of the popular techniques to provide consistent QoS to the user is Vertical Handoff (VH). The main concept of VH is to migrate the user to another WN which can provide the requested QoS. Even though substantial contribution has been made in the literature for VH techniques, security	**387-392**

	oriented VH techniques are limited in number. Security aspect has become critical in Next Generation WN, due to new form of threats which are being introduced, and VH techniques also need to focus on security issues to provide safe and robust communication. In the literature, survey on different security threats, secure VH techniques and future issues has not been effectively presented; in this work, comprehensive survey on all these aspects is presented to aid future research in secure VH. **Keywords:** Next Generation Wireless Networks, Vertical Handoff, Security.	
68.	**Authors**	**Prof. Girish Deshpande, Dr.V S Rajpurohit, Dr.S S.Sannakki, Prof.Sudhindra K Madi**
	Paper Title	**Designing Optimal Path for Wireless Sensor Networks by Combining Energy and Security Components.**
	Abstract: The data transferring using multi-directional in remote sensor systems (WSNs) offers little security against malicious attacks through proper acknowledgement. An enemy can use confidential information to attack events, also deteriorate proper functioning of routing protocols. This situation is also expanding to mobile and hostile network conditions. In this novel, I would like to propose trustworthy and operational location based routing instructions which provides security and also helpful to extends this works for large wireless sensor networks. The proposed idea has been clearly providing the mechanism to finds out malicious attacks as well as to provide security. As per the statistics, there are constraints on storage, processing of data, battery resources and variation in frequency ranges deeply effects for implementation, in addition to this data propagation, improper links between network components, requires extra care while choosing different routing paths. **Keywords:** Routing paths, Routing schemes, hostile conditions.	**393-399**
69.	**Authors**	**Uma R, Sarojadevi H, Sanju V**
	Paper Title	**Design Environment for Verilog Module Analysis using Open Source Tools**
	Abstract: Network-on-Chip provides possible solutions for the limitations and challenges by the present day architectures for the interconnections. The characteristics of NoCs include energy efficiency, reliability, scalability, reusability and distributed routing decisions. The existence of today's semiconductor industry depends on shorter time-to-market, challenge of meeting increasing transistor density, reduced product life cycle, and operating frequencies getting higher. This paper discusses about a design environment for the analysis of Verilog NoC module. Tools such as Icarus Verilog, GTK Wave, Yosys etc. which are used for compilation, simulation and synthesis of the NoC are also discussed in this paper. **Keywords:** Network-on-Chip, Semiconductor, Verilog, Simulation, Synthesis.	**400-403**
70.	**Authors**	**Kuleen Kumar, Rudra Sankar Dhar**
	Paper Title	**Modelling and Simulation of Tri-layered (s-Si/s-SiGe/s-Si) Channel Double Gate NanoFET**
	Abstract: The down scaling of Meatal Oxide Semiconductor Field Effect transistor (MOSFET) devices nevertheless the most important and effective way for accomplishing high performance with low power adopted the miniaturization trend of channel length from the past, which is very aggressive. The double gate NanoFET with the incorporation of the strain Silicon technology is developed here on 45nm gate length comprises of tri-layered (s-Si/s-SiGe/s-Si) channel region with varied thicknesses. The induction of strain increases mobility of charge carriers. Two gates are deployed in bottom and up side of strained channel provides better control over the depletion region developed by applying same gate bias voltage. This newly developed double gate NanoFET on 45nm channel length provides 63% reduced subthreshold leakage current, and maximum electron drift velocity in strained channel. **Keywords:** HOI MOSFET, lattice mismatch, strained Silicon, work function.	**404-407**
71.	**Authors**	**Akhilesh Yadav, Poonam Jindal, Devaraju Basappa, Mahendra Prakashaiah**
	Paper Title	**Forward Error Correction for Gigabit Automotive Ethernet using RS (450, 406) Encoder**

	Abstract: Error correction and detection during data transmission is a major issue. For resolving this, many error correction techniques are available. The Reed-Solomon coding is the most powerful forward error correction technique used in Gigabit Automotive Ethernet to compact channel noise during data transmission. The car becomes smarter day by day and more new advanced electronics is being used in-vehicle. Gigabit Automotive Ethernet(1000BASE-T1) provide fast bandwidth for many kinds of applications and connect different functional parts in the car. The Reed Solomon(RS) coding is the powerful forward error correction(FEC) technique used in 1000BASE-T1 Automotive Ethernet. RS (450,406) coding is also known as shortened Reed Solomon codes. The Reed Solomon(RS) codes are generally used in communication system due to its ability of correcting both random and burst errors. Reed Solomon codes are no-binary systematic linear block codes. RS coding is widely used in high speed communication system. This RS code is implemented using Galois field(GF). The Automotive Ethernet is encoded using RS (450,406) codes through GF (512) for FEC. This RS codes can correct the error up to t=22 symbol, while other encoding techniques corrects the error in t bits. In this paper we implemented the RS (Reed Solomon) code in Cadence ncsim Verilog software and used Cadence Simvision for showing timing diagrams. This RS code uses 9-bit based shortened (450,406) code. **Keywords:** Automotive Ethernet, Cadence, Galois Field, Generator polynomial, ncsim, Reed Solomon, RS encoder, Primitive elements, Primitive polynomial, Simvision, Verilog.	**408-414**

72.	**Authors**	**Anitha C L, Dr. R Sumathi**
	Paper Title	**Design and Development of an Energy efficient algorithm for Data Aggregation in Wireless Sensor Network using Unsupervised Learning**
	Abstract: A wireless sensor network generally defined as the collection of sensors that are utilized to track and record the data in real-time on an ongoing basis from different applications. In comparison with other sensor nodes, data transmission obtained through sinks in WSN eliminates the energy in nearby nodes. This issue is identified as one of the major problems in a wireless sensor network. Two new algorithms were proposed in this research paper that mainly focused on the usage of machine learning algorithms to solve the data collection issue in the wireless sensor network. The algorithms proposed will able to create cluster heads to decrease energy usage, this will save about 50% of battery power consumption and mobile sinks are used to record the data from cluster heads in a network. Ultimately, current algorithms such as RLLO, DBRkM, CLIQUE, RL-CRC, and EPMS were compared. **Keywords:** Agents, Cluster head, Markov decision process, Sink traversal, Reinforcement learning.	**415-421**

73.	**Authors**	**Mahesh Kumar K M, Pradeep R and Sunitha N R**
	Paper Title	**Formal Verification of Forward-Secure Authenticated Key Exchange Scheme for Location-Based Service Application**
	Abstract: A Location-based service (LBS) is a popular information service which uses the geographical position of the user to provide service. Major challenges for wide deployment of such services is security and privacy, in our paper we propose a generic model of authenticated key exchange (AKE) protocol termed as forward-secure authenticated key exchange protocol (FSAKE) which uses elliptic curve cryptosystem. The FSAKE protocol supports concurrent sessions and is used for the exchange of secure seed values which are used in forward-secure pseudo-random number generators to generate secret keys for message authentication and symmetric encryption. The FSAKE protocol is a key evolving scheme which updates the long-term keys (LTKs) at regular intervals and guarantees the security of the past keys and mitigates the damage caused by exposure of the current key. We make use of Scyther model checking tool to prove the correctness of FSAKE protocol security. **Keywords:** Authenticated Key Exchange, Elliptic Curve Cryptography, Forward-Security, Formal Verification, Location-Based Services, Symmetric Key Evolving Systems.	**422-429**

74.	**Authors**	**Mr. Anil Kumar and Dr. B I D Kumar**
	Paper Title	**Performance Analysis of Ad-Hoc Networks using Statistic Mechanics**
	Abstract: An ad-hoc network is an interconnection of source node and destination node pairs with wireless communication, and it is non-centralized manner, nodes are having self-	**430-434**

	organizing capabilities. The nodes can move dynamically in such a way that interconnection between nodes vary. The routing mechanism in these networks is in multi-hop manner by taking help of intermediate nodes, these nodes helps in packet flow between source and destination node. Advantage of this type of routing is conservation of energy and efficiently delivers packets. This multi-hop manner of packet transmission introduces blending of various traffic flows, resulting in inter-dependencies between activities of nodes and strong correlations among the nodes. The analysis of ad-hoc networks is complicated task; techniques of the information theory will not yield an accurate analysis. In this work, we use a sub field of statistic mechanics called Totally Asymmetric Simple Exclusion Process and MAC technique for evaluating ad-hoc networks. This helps in evaluating performance parameters such as average delay and throughput of linear ad-hoc network. Finally it has been demonstrated that TASEP can improve the performance parameter such as end to end delay and throughput. **Keywords:** Ad-hoc networks, Random Time Division Multiplexing, Totally Asymmetric Simple Exclusion Process.	

75.	**Authors**	**Sandeepkumar Kulkarni Dr. Raju Yanamshetti**
	Paper Title	**MIMO Reconfigurable Antennas for Wi-Fi 2.4 GHz Communication.**
	Abstract: We are living in the era of wireless communication. From accessing Internet through smartphones and Wi-Fi, changing TV channels with remote controls, using wireless computer peripherals like mouse, keyboards and headphones to mobile body area networks for keeping track of heart rate, blood pressure and body temperature, applications of wireless communication is everywhere. The most frequent and common use of wireless communication is mobile phones or cellular phones which uses the radio waves to carry data from one place to another. Though there are many advantages of wireless communication which makes it so popular, there are two most significant challenges in implementing a wireless communication system: multipath propagation and limited information rate. The concept of multipath propagation refers to travelling of wireless signal to the receiving antenna via different paths in space resulting in inter-symbol interference and fading. This phenomenon leads to failure of maximum use of the bandwidth resulting in low information rate. The problematic event of multipath propagation can be exploited by using more than one antenna (MIMO) in the sending and the receiving side. Multiple sending antennas use the concept of space diversity by sending same data signal through different path based on the fact that different version of the same signal will be received by the receiver increasing quality and reliability of the received data signal. Though in the current usage scenario, MIMO actually exploits multipath propagation concept for carrying more than one data stream over the same radio signal. One of the most important factors that influence the efficiency of MIMO antenna systems is the design layout of multiple antennas. Microstrip antennas, having small height and width, low cost, low weight and small volume can be a suitable candidate for being used as MIMO. The wireless performance of locally limited wireless communication systems such as Bluetooth and Wi-Fi using 2.4 GHz unlicensed band can be increased significantly by incorporating the advantages of MIMO and microstrip antenna technology. In this paper, the performance of MIMO Microstrip antenna using OFDM technique for 2.4 GHz communication has been evaluated. **Keywords:** Dielectric constant, MIMO, Microstrip antenna, OFDM Technique, Wireless communication, 2.4GHz,	**435-442**

76.	**Authors**	**Ipsita Sanyal, K R Dhavana, Kailash T V, Kruthika R, Dr. Bhavanishankar K**
	Paper Title	**Vibration Guided Automatic Vision for Enhanced Security**
	Abstract: The existing security systems are secure but are not smart enough to handle arbitrary scenarios leading to many false triggers of the alert system. Furthermore, these systems require constant human intervention which is difficult to achieve. They are also vulnerable as they contain many loopholes and the sensors used are easily manipulatable. The proposed system tries to solve this problem in an efficient and a smart way by the use of sensors, AI and IoT which makes the system robust and resistant against attacks. The system implements advanced face detection via Single Shot Detection and face recognition via Inception Neural Network for recognition of object in a fast and accurate way. This helps the system act according to the situation, thus preventing any damage to the region which implements this system. In this work the proposed system is implemented and tested as a Home Security System. The system can also	**443-448**

	be extended to work in other areas like banks, data hubs, museums etc. The overall accuracy of the system was recorded to be 97.95%. **Keywords:** CNN, Inception Neural Networks, Internet of Things, security systems, recognition.	
77.	**Authors**	**Sahana D, Prajwal M**
	Paper Title	**E-WYRE: Re-Engineering Higher Education**
	Abstract: Learning can be broadly classified into academics and non-academics. Academics is predominantly pre-defined syllabus driven and classroom centric with faculties on board. Non-academics are generally provided less than 10% of the total learning time. Areas like industry, research and inspiration are rarely addressed in the course time. The sector of E-learning has achieved proliferating reputation and popularity, and for the right grounds. Majority of the youth in this country belongs to the age group of 15-19. And a minimum of youth belongs to the age group of 25-29. With this growing population of the youth increases the learners and increases the need of more teachers and advanced teaching mechanisms. Begetting a powerful learning affair with a classroom like experience, presenting a near to conventional classroom essence are the aspirations of a lucrative E-learning platform. E-wyre is a versatile knowledge sharing supplement to help students. Especially at UG & PG level and above the education institutions address the access and shortfall of high caliber educators. The impact of this is pretty high at rural areas. The objective of e-wyre is to connect various domain knowledge experts (DKE) from various fields. This will be live, virtual, interactive and on-demand. **Keywords:** E-learning, E-wyre, robust learning. Domain Knowledge Expert	**449-452**
78.	**Authors**	**Prajwal M J, Prajwal M**
	Paper Title	**Patient Monitoring System for Easy Supervision using LabVIEW.**
	Abstract: This study is aimed to develop a self-managing application for patients. Here, a novel model of an automatic pill reminder that can allay the inconsistency or uncertainty is presented. This application is useful in taking prescribed medications of the right dosage at the exact specified time guided by the medical practitioner. Hence, believed to shift from some particular approaches that are most voluminously resting on the human memory to automate with negligible oversight. So as to relieve people from human miscalculations of giving wrong pills at the wrong clock in the wrong amount. **Keywords:** Medication adherence, eHealth, Elderly Health- care.	**453-457**
79.	**Authors**	**Shashank R, Shreyas B, S Shashank, Yashwanth Venkat Chandolu, Dr. Bhavanishankar K**
	Paper Title	**Shuddhi -A Cleaning Agent**
	Abstract: Cleaning activities are considered as mundane tasks. These tasks though time-consuming and unpleasant, are essential for a hygienic lifestyle. This issue has been tackled before but they have come at a price, whether in the form of overconsumption of energy resources or prices of such products. Also, they only try to do either dust removal in the form of vacuum cleaning or mopping the floor, but not both. Reducing energy consumption and lowering expenses will help in the widespread usage of such automated alternatives. Combining the two forms of cleaning will help in increasing the versatility of the product. This paper outlines a solution to these issues through the development of a robot. This robot consists of a brush in the front which helps in the removal of dust and a set of mops that cleans the floor using disinfectant water. It can operate in an autonomous mode where it navigates through the room using ultrasonic sensors. It can alternatively be operated manually through the user's smartphone. **Keywords:** Autonomous Robots, Domestic Help, Manual Control, Mopping, Power efficient, Sweeping	**458-462**
80.	**Authors**	**Varun R, Neema N, Sahana H P, Sathvik A, Mohammed Muddasir**

	Paper Title	**Agriculture Commodity Price Forecasting Using ML Techniques**	
	Abstract: India is mainly an agricultural country the farmer is an important part of agriculture. Agriculture mainly depends on him. Even then the farmers cannot predict prices for their commodities because prediction of prices plays a major challenge. Several characteristics are taken into account so that the crop price forecast is accurate. We consider the attributes of the Mysore region to make it a real-time application framework. Price prediction is a big issue for farmers who are not aware of the market prices. Forecasting price of agriculture commodities helps the agriculturist and also the agriculture department of mysore region to make decisions. The new model predicts the accuracy for the agricultural yields and it also avoids the role of middle man. **Keywords:** Price Prediction, Data Mining, Naïve Baysian Classifier, k-means, Artificial Neural Networks, Support Vector Machine, Prediction, Extended Kalman filter, Wavelet, Error Analysis.		**463-466**
81.	**Authors**	**B G Sudha, V Umadevi, Joshi Manisha Shivaram, Mohamed Yacin Sikkandar, Belehalli Pavan, Abdullah Al Amoudi**	
	Paper Title	**Diabetic Foot Risk Classification Using Decision Tree and Bio-Inspired Evolutionary Algorithms**	
	Abstract: Diabetic foot complications are a burden to the Indian population which affects both financially and physically. The complications could be prevented if the risk of diabetic foot are detected well in advance before the peripheral nerves are damaged leading to amputation and limb loss. The quantification of severity plays an important role in timely intervention, delivery of appropriate treatment and prevention of amputation. This can be modeled as a classification problem where the risk category is stratified into different levels of severity. This paper is an approach to build such a system, capable of classifying the risk category of diabetic patients for suitable follow-up and care. Decision trees are used for the same with features selected using bio-inspired evolutionary algorithms like Particle Swarm Optimization (PSO), Genetic Algorithm (GA), Cuckoo Search (CS), FireFly (FF), Dragon Fly (DF) and Gravitational Search Algorithm (GSA). The overall accuracy is 77% but it identifies the low risk and high risk cases effectively with 97% and 89% respectively. **Keywords:** Diabetic foot risk classification, Decision Tree, Feature Selection, Bio-Inspired algorithms.		**467-474**
82.	**Authors**	**Anjan Kumar K N, Chandrashekar B S**	
	Paper Title	**Location Based Web Object Search using Probabilistic Classification Model.**	
	Abstract: The classical Web search engines focus on satisfying the information need of the users by retrieving relevant Web documents corresponding to the user query. The Web document contains the information on different Web objects such as authors, automobiles, political parties e.t.c. The user might be accessing the Web document to procure information about a specific Web object, the remaining information in the Web object [2-6] becomes redundant specific to the user. If the size of Web documents is significantly large and the user information requirement is small fraction of the document, the user has to invest effort in locating the required information inside the document. It would be much more convenient if the user is provided with only the required Web object information located inside the Web documents. Web object search engines provide Web search facility through vertical search on Web objects. In this paper the main goal we considered is the objective information present in different documents is extracted and integrated into an object repository over which the Web object search facility is built. **Keywords:** Web Object, Web Search Engine, Object Query, Feature Selection		**475-483**
83.	**Authors**	**Lakshmi Bhaskar, Dr. Yamuna Devi C R**	
	Paper Title	**Data Aggregation and Its Impact on Performance Enhancement**	
	Abstract: Wireless sensor network incorporates an innovative aspect called as data handling technologies for big data organization. In today's research the data aggregation occupies an important position and its emerging rapidly. Data aggregation incudes, process of accumulating the data at node, then either store or transfer further to reach out the destination. This survey		**484-487**

	depicts about the previous work on data aggregation in WSN and also its impact on the different services. There are number of data aggregation techniques available for reducing the data, processing the data and storing the data. Some of them are discussed here as a review. The data aggregation performed using certain techniques can also be aimed in having energy efficiency, time efficient, security could be in the form of confidentiality, unimpaired, authenticate, freshness, quality, data availability, access control, nonrepudiation, secrecy, secrecy. These are the relevant performance metrics to maintain the better Qos in WSNs applications. The goal of this paper is to display an overview of existing techniques for performance improvement in homogenous/ heterogenous networks. **Keywords:** Data aggregation, Energy efficient, QoS, Wireless sensor networks.	
84.	**Authors**	**Monika P, G T Raju**
	Paper Title	**Integration of Healthcare Ontologies at Schema Level using Customized Metadata**
	Abstract: In today's fast growing competitive world, Data mining has become a research area of great interest as the problem of handling data in many circumstances toss lot of opportunities for research discoveries. Data being generated every second particularly in healthcare sector need to be managed efficiently so that further perusal when needed will be easier for medical professionals and researchers as an aid of decision support. Heterogeneity in the structure of data rather than the semantic discovery is the key of open challenge remained yet unaddressed. Structural construct deals at schema level of data depiction. Ontologies as means of data representation in the form of knowledge graphs are serving the field of Machine Learning (ML) from decades supporting automated knowledge extraction. Lot of research contributions are found to handle general formats to certain extent, but handling images and Portable Document Format (PDF) remain open as a major problem statement to be addressed in-order to enjoy successful information retrieval benefits. However not all relevant data is being retrieved during semantic queries due to non-homogeneity in data representation at the schema level resulting in ruling out of the document matches. In order to address the stated issue, an approach has been presented in the paper which aims at extracting metadata about the documents facing problem of heterogeneity, constructing ontologies based on the customized metadata tags followed with integration of ontologies for enhancing the prediction accuracy by increasing the relativity of documents in the semantic context. The proposed methodology can be evaluated using any of the classification techniques and solutions proved worth can be retained for daily access of semantic information thereby achieving good prediction accuracy in the process of efficient knowledge recovery. **Keywords:** Semantic web, Ontologies, Ontology agents, Ontologies Integration, Health care, Schema.	**488-493**
85.	**Authors**	**Sowbhagya M P, Ganavi K R, Yogish H K**
	Paper Title	**Knowledge Discovery from Web Data for Web Personalization**
	Abstract: Because of the large and rapid increase in web data size and number of users, web users now face the problems of overloading and drowning information. As a result, Recovery of internet-based data and web applications, providing web users with more accurate information becomes a critical issue. In this study, by analyzing web data features, we aim to improve the performance of web information retrieval and web presentation through web data mining processes that discover the knowledge (intrinsic relationships) between web data expressed as textual, linkage or usability information. We concentrate on discovering web usage patterns through web usage mining, and then using the discovered usage knowledge along with profile information to provide web users with more personalized web content. Personalization is an engaging service for website visitors, based on their characteristics and deliberate behaviors to facilitate conversion and long-term commitment expectations. The purpose of this work is to extract the knowledge from web data and use this knowledge to create a web personalization system that allows users to access the content of their need from the website without specifically specifying it. The knowledge could be the navigational actions of the user as exposed by web access log analysis, as well as the characteristics and preferences of the user reflected by user profiles. Such knowledge is further analyzed to improve system performance, retention of users and/or modification of the site. This paper provides a comprehensive survey of the different	**494-501**

	approaches suggested by Web Personalization researchers and list out some of the issues that need to be tackled soon. **Keywords:** Web Personalization, User Profile, Ontology, Information Retrieval, Semantic Web	
86.	**Authors** | **Madhu H S, Nithin Gowda N S, Srivatsa , Yashas Gowda H M, Ramesh B** **Paper Title** | **Virtual Assistant App for Disabled People** **Abstract:** Human life is heading towards busy and hectic schedule it becomes necessary to automate the home appliances. The main objective of virtual assistant is controlling, managing and co-ordinating surrounding devices in a comfortable, secure and effective way. Some methods can control and handle different types of appliances using unique methodology. Virtual Assistant presents the automated approach of controlling the household devices that could ease the tasks of using the traditional methods. Augmented Reality is a recently developed method for the automation of various electrical appliances which is used to allow virtual pop ups on the screen when the camera of the smartphone is pointed towards the object. This pop up enables the user to turn on or off the device by simple touch selection thus improvising the ways of automation in a significant way. This application is built in such a platform where a visually challenged one also has a chance to interact with the system through braille method. The entire system concentrates on simple way of interaction. The best way of interaction is through Android Application. Developed app will not only be helpful for disabled persons but also provides a reliable and well-mannered platform for each and every individual that helps in saving energy. Face recognition plays a vital role in providing security for the home owner by providing information about the people present at their door-step. **Keywords:** Virtual assistant, Android application, Augmented Reality(AR), Face recognition.	**502-505**
87.	**Authors** | **A N Ramya Shree, P Kiran** **Paper Title** | **Quasi Attribute Utility Enhancement (QAUE) A Hybrid approach for PPDP** **Abstract:** The data analytics has become prominent for today's world because it is defined as the methodology of investigating data sets in order to draw conclusion about the information it contain. The Data Mining is a key part of Data Analytics because it has techniques and tools which help to explore knowledge which is hidden in data. The outcome of data analytics is very crucial to Business organizations because it helps in decision making process. In Data Analytics there are two roles which are very prominent and they are Data publisher and Data Analyzer. Data Publisher is the one who provides data for analytics which is collected from heterogeneous sources. Data Analyzer receives data from Data publisher and uses for data analytics. The main issue involves here is data privacy, which is concerned with the proper treatment of data i.e. approval, discern and regulations. A separate field called PPDP- Privacy Preserving Data Publishing mainly concentrates on how data is shared, used by data analysts and it may be implicit or explicit to organizations (third party) such that it should be safer from untrusted people and attacks. The PPDP offers several approaches to publish data in safe manner and supports data utility, but there is a need of domain specific privacy concern because privacy needs are different based on the domain and in mean time how data is utilized. In the paper a hybrid approach is proposed to preserve data privacy in concern with data publisher which supports domain specific data privacy and utility. **Keywords:** PPDP, PPDM, DW, CH	**506-511**
88.	**Authors** | **G Swathi, Girijamma H A** **Paper Title** | **Model Based Testing Process for Software Systems** **Abstract:** Software Testing Process is a very significant issue that influences the standard of software system, that plays a very key role within the development of entire software system life cycle. Software testing is evolving, and Model Based Testing (MBT) is an integral piece of modern test automation. Compare with ancient testing strategies, Model Based Testing is in a position to maintain and achieve testing responsibilities in a quicker, inexpensive and very effective manner. Model Based Testing has grown interest with the familiarization of models in the software system design process and development process. This paper provides a summary	**512-516**

	of Model Based Testing and describes its approaches. It discusses software testing evolution. The Model Based Testing (MBT) process is represented, and also the steps are discussed in detail. Additionally, challenges, benefits and drawbacks with Model Based Testing are briefly bestowed. It also describes the suitable applications of Model Based Testing. **Keywords:** System Under Test (SUT), Model Based Testing (MBT).	
89.	**Authors** | **Laxman L Kumarwad** **Paper Title** | **Assessment of E-Readiness and Effectiveness of E-Governance Projects In Satara District, Maharashtra State In India**	
	Abstract: In this decade, a number of e-governance initiatives are implemented in the Satara district. It is essential to assess the e-readiness and effectiveness of the initiatives for smooth running of the projects and future enhancement plan. The researcher has made an attempt to assess the e-readiness and effectiveness of e-governance initiatives in Satara district. For this purpose, the researcher identified the seven key indicators for assessment of effectiveness of e-governance projects running in the Satara district, Maharashtra, India. The researcher collected primary data from the citizens of Satara district and secondary data is gathered from government gazettes, government publications, census of India. Finally, the researcher specified the conclusion. **Keywords:** E-Readiness, Assessment Indicators, CSC, Assessment Framework.	**517-521**
90.	**Authors** | **Praveen Kumar P S, Dr H S Jayanna** **Paper Title** | **Creation and Instigation of Triphone based Big-Lexicon Speaker-Independent Continuous Speech Recognition Framework for Kannada Language**	
	Abstract: This paper proposes a framework that is intended to do the comparably accurate recognition of speech and in precise, continuous speech recognition (CSR) based on triphone modelling for Kannada dialect. For designing the proposed framework, the features from the speech data are obtained from the well-known feature extraction technique Mel-frequency cepstral coefficients (MFCC) and from its transformations, like, linear discriminant analysis (LDA) and maximum likelihood linear transforms (MLLT) are obtained from Kannada speech data files. At that point, the system is trained to evaluate the hidden Markov model (HMM) parameters for continuous speech (CS) data. The persistent Kannada speech information is gathered from 2600 speakers (1560 men and 1040women) of the age bunch in the scope of 14 years-80 years. The speech information is acquired from different geographical regions of the Karnataka (one of the 29 states situated in the southern part of India) state under degraded condition. It comprises of 21,551 words that spread 30 locales. The performance evaluation of both monophone and triphone models concerning word error rate (WER) is done and the obtained results are compared with the standard databases such as TIMIT and aurora4. A significant reduction in WER is obtained for triphone models. The speech recognition (SR) rate is verified for both offline and online recognition mode for all the speakers. The results reveal that the recognition rate (RR) for Kannada speech corpus has got a better improvement over the state-of-the-art existing databases. **Keywords:** Automatic speech recognition, Continuous speech, Kannada dialect, Kaldi toolkit, monophone, triphone, HMM, WER.	**522-528**
91.	**Authors** | **Debjyoti Das Adhikary, Deepak Gupta** **Paper Title** | **Ensemble Learning Models for Churn Prediction**	
	Abstract: Customer churn prediction has always been a major problem in telecom industries. Customer retention is always one of the major objectives of any service providing company as maintaining loyal customers has always been cheaper than acquiring new customers. In this paper, we have tried to predict the churn rate of a dataset from a telecom company using some classifiers and then training the same classifiers with ensemble learning models. The ensemble techniques are assumed to yield better results. We have used 42 classifiers from over different like Nearest Neighbors, Decision Tables, Random Forests, etc., which roughly covers almost all the well-known classifiers used in the industry in today's date. Further, the ensemble techniques are used in our work such as bagging and boosting which are trained on the same classifiers so that we can compare the performance of individual classifiers as well as the same when used as	**529-534**

	a base classifier. We have extracted the accuracy of the classifiers, True Positive and False Positive rates, f-measure, MCC score, Area Under Curve (AUC) area and Precision-Recall (PRC) area. These measures, not only helped us know which algorithm is more fruitful but also gave us insights about the varying performance. It is observed that, in most of the cases, the classifiers, when combined with either of the ensemble techniques, yield better results. The experimental results reveal that the accuracy of the classifier improves when combined with bagging or boosting. **Keywords:** Churn Prediction, Bagging, Boosting, Machine Learning.	
92.	**Authors**	**Bikram Kumar, Deepak Gupta, Rajat Subhra Goswami**
	Paper Title	**Classification of Student's Confusion Level in e-learning using Machine Learning**
	Abstract: With the advancement of technology, the traditional mode of teaching-learning pedagogy has evolved into online education system as it is easily accessible. But, it is very difficult to detect whether the students are 'confused' or 'not confused' while watching online videos. Getting confused while watching online videos is one of the root causes of less performance of the students. Keeping in mind the above statements, we would like to investigate whether the students are 'confused' or 'not confused' while watching Massive Open Online Course (MOOC) videos. There are a lot of studies that prove electroencephalogram (EEG) signals behave differently as we are in different conditions such as happy, sad, angry, etc. So, in this paper, we have applied several supervised learning algorithms to detect if the students are 'confused' or 'not confused' while watching MOOC videos using EEG data. The results of this paper show that machine learning is a potential technique, for the analysis of EEG data that can detect the confusion level of the students which is comparable to human observation for predicting the confusion level of the students that can improve the quality of online education system. **Keywords:** Confusion, EEG, Machine Learning, MOOC, Supervised Learning	**535-540**
93.	**Authors**	**Vidya Y, G T Raju**
	Paper Title	**Early Detection of Depression in Women using Machine Learning Approaches**
	Abstract: According to World Health Organisation(WHO), most prevailing mental sickness and leading evidence of disability is Depression. In India Depression is much more prevalent in women of all age groups. Eventhough effectual treatment is noted for Depression, it is not reaching the maximum number of sufferers in both wealthy and pathetic countries. In this respect, many scientific discipline and researchers have been employed to develop Machine Learning models to determine level of Depression. This paper presents background knowledge on depression and useage of machine learning and also review past studies that apply machine learning for determine depression with their merits and demerits. **Keywords:** Depression detection, Machine Learning, Major depressive disorder (MDD), Anxiety.	**541-547**
94.	**Authors**	**Vijayalaxmi Mekali, Dr. Girijamma H A**
	Paper Title	**Novel CADe/CADx System for Lung Nodules Segmentation and Classification on Computed Tomography Images**
	Abstract: Detection and classification of different types lung nodules poses major challenges in medical diagnosis routine. Classification of segmented nodules based on extracted hybrid features of segmented nodules have shown remarkable performance. Recently deep features alone and also with combination of hybrid features have improved nodules classification. In this research work new CADe/CADx system is proposed for detection and classification of Well Circumscribed Nodules, Juxta Vascular Nodules and Juxta Pleural Nodules. In nodules detection part, algorithms proposed in our previous work were used. Classifiers decision fusion based new nodules classification system is proposed. Four set of hybrid features and deep features using Convolution Neural Network are considered from segmented nodules. Hybrid features set consist of twenty-four shape features, six GLCM features in four directions with a distance of two, six First Order Statistic features and twelve energy features. Five individually trained Probabilistic Neural Networks by all five set features separately used in nodule classification. In	**548-556**

	classification process all five classifiers decisions are fused at 2-level, 3-level, 4-level and 5-level. The proposed system achieved highest performance with 5-level fusion compared with other level fusions. System was evaluated on CT images of LIDC database with consideration of 2669 lung nodules of malignancy rate 1 to 5. Based on malignancy rate 2669 nodules are grouped as dataset 1 and dataset 2 with nodules of malignancy rate 1, 2, 3 and 3, 4,5 respectively. The 5-level decision fusion achieved highest accuracy of 95.72, sensitivity of 95.52, specificity of 95.79 and Area Under Curve of 96.21 for dataset 1 and accuracy of 92.54, sensitivity of 90.48, specificity of 94.63 and Area Under Curve of 92.69 for dataset 2. **Keywords:** Computed Tomography, Computer Aided Detection/Diagnosis, Convolution Neural Network, Lung cancer and Lung Nodule Classification	
95.	**Authors**	**Kusuma S, Dr. M V Sudhamani**
	Paper Title	**Object Detection Techniques in Videos**
	Abstract: Object detection in videos has increased its popularity because of its wider applications. It has gained more research attention now days as it is applicable in real time situations like pedestrian detection, anomaly detection, Self moving cars, sports, counting of people etc. This paper begins with the introduction of object detection and briefs the basic steps in the process. It also provides a review of various techniques and approaches used for object detection in videos. Discussion of every approach and limitations will provide several promising directions and guidelines for future work.	**557-562**
96.	**Authors**	**Shweta Bali, Shyam Sunder Tyagi**
	Paper Title	**Empirical Assessment of Transfer Learning Techniques for Surgical Tools Classification**
	Abstract: Automated surgical tool classification in the medical images is a real-time computerized assistance for the surgeons in performing different operations. Deep learning has evolved in every facet of life due to availability of large datasets and emergence of Convolutional Neural Networks (CNN) that have paved the way for development of different image related processes. In the medical field there are number of challenges such as non-availability of datasets, image annotation requires extensive time, imbalanced data. Transfer learning is the process of applying existing pretrained models to the new problem. It is useful in those scenarios where the large datasets are not available, or the new dataset shares visual features with the existing dataset on which the model is pretrained. Most of the pretrained models are trained on ImageNet which is a largescale dataset (1.2 million labelled training images). In this paper we evaluated and explored two different CNN architectures namely VGG16 and MobileNet-v1-1.0-224 on subset of surgical toolset. This paper presents comparative analysis of the techniques using learning curves and different performance metrics **Keywords:** Convolutional neural networks, Data Augmentation, Deep learning, Transfer learning	**563-568**
97.	**Authors**	**Swetha B, Dr. S V Uma**
	Paper Title	**Efficient Lookup Solutions for Named Data Networks: An Analysis**
	Abstract: Named Data Networking (NDN) is a fast growing architecture, which is proposed as an alternative to existing IP. NDN allows users to request the data identified by a unique name without any information of the hosting entity. NDN supports in-network caching of contents, multi-path forwarding, and data security. In NDN, packet-forwarding decisions are driven by lookup operations on content name of the NDN packets. An NDN node maintains set of routing tables that aid in forwarding decisions. Forwarding the NDN packets depend on lookup of these NDN tables and performing Longest Prefix Matching (LPM) against these NDN tables. The NDN names are unbounded and of variable length. These features along with large and dynamic NDN tables pose several challenges that include increased memory requirement and delayed lookup operations. To this end, there is a need for an efficient data structure that support fast lookup operations with low memory overhead. Several lookup techniques are proposed in this direction. Traversing trie structures would be slow since every level of trie require a memory access. Hash tables incur additional hash computations on names and suffer from collisions. Bloom filters suffer from false positives and do not support deletions. Improving the performance of these	**569-574**

	structures can lead to a better lookup solution. This survey paper explores different lookup structures for NDN networks. Performance is measured with respect to lookup rate and memory efficiency. **Keywords:** Cache store (CS), Forwarding Information Base (FIB), Longest Prefix Matching (LPM), Pending Interest Table (PIT).	
98.	**Authors** | **Mahabaleshwar Kabbur, Dr. V Arul Kumar** **Paper Title** | **MAR Worm: Secure and Efficient Wormhole Detection Scheme through Trusted Neighbour Nodes in VANETs** **Abstract:** VANET is an application and subclass of MANET's, in which nodes are mobiles and considered as moving, communicating vehicles in a wireless adhoc network. Vehicles communicate through dedicated short rage communication (DSRC) via IEEE 802.11p protocol. With the progress of wireless technology, vehicular ad hoc network has become emerging technology to support real-time traffic condition, safety, entertainment, enhance driver experience and emergency navigation in intelligent transport system (ITS). Core of VANETs application is the communication between vehicle to vehicle (V2V), vehicle to roadside unit (V2RSU) and securing the data messages from malicious activities and attackers in the network. Securing V2V and V2RSU communication has raised challenging issues in detecting and avoiding malicious attackers for secure communications. VANET's are exposed to different threats while routing data, wormhole attack is the most threatening routing attack which severely effects VANET routing data and causes incorrect routing by private tunnels and damages to VANET's communication in terms of data leakage, data dropping, and delayed delivery. However existing attack detection schemes have failed to meet secured VANETs communication leading to packet loss. In this paper we propose an efficient wormhole detection mechanism by creating potential and trusted neighbour nodes discovery (TNND) in VANETs, which can detect malicious nodes through enabling common forwarding neighbour nodes as witness to monitor data packets are forwarded by malicious nodes. Basically this mechanism is based on trust management. This scheme is resilient and resistant against attackers launching malicious nodes to corrupt entire network. Simulation is carried on event driven network simulator and results shows efficient detection of wormhole nodes, increases packet delivery and performs better than existing detection scheme. **Keywords:** Worm hole, data security, MANETS, VANETS, malicious, attacks	**575-578**
99.	**Authors** | **Saritha I G, Rajeshwari Hegde** **Paper Title** | **Research Challenges and QoS Provisioning MAC Protocol for Cyber Physical Systems** **Abstract:** One of the latest emerging class of systems which implants cyber features into the physical world is the Cyber Physical System (CPS), which provides a platform for interaction between physical world and virtual world. CPS promises to transform the physical world to virtual world through interaction similar to human interaction with each other. With the increasing demand of cyber physical systems in various applications, it requires wide variety of communication protocols for reliable and real time data transmission. The low- power and low – cost features of some canonical protocols lead to some short falls, reliability and timeliness. In this paper, we discuss an extensive survey on MAC protocols and Research challenges for enhancing the QoS in CPS. **Keywords:** CPS, MAC and QoS	**579-584**
100.	**Authors** | **Karthik S A, Dr. Manjunath S S, Shrinivasa G, Sneha C R** **Paper Title** | **A Systematic Analysis of Review on Microarray Segmentation Algorithms** **Abstract:** Microarray is a significant tool and influential method which is used to analyze the cDNA expression in living beings. With the help of this technology one can compute gene expression profile in massive and parallel way. Microarray image segmentation offers an input for subsequent analysis of the extracted microarray data. This work addresses on the different approaches used for segmentation of microarray images. Based on the morphology, topology of spots various methods such as circular shaped, region based, active-contour model based segmentation, shape based, supervised learning and watershed segmentation has been taken for	**585-589**

	this study. This paper explores and compiles various non statistical approaches used in the field of microarray image segmentation. Finally, general tendencies in microarray image segmentation are presented. **Keywords:** Microarray, Mean Absolute Error, Spots, Supervised Learning.	
101.	**Authors** — **Mrs. Shwetha M S and Dr. Girijamma H A** **Paper Title** — **IPOG Modified Design Technique for Effective Testing** **Abstract:** Software testing is a very crucial, effective and efficient stage in Software Development Life Cycle. As Customers satisfaction and reliability is very essential, this can be achieved by testing phase. The cost can be reduced when testing time is decreased. Hence, combinatorial method is a very effective and well-proved method where high quality of software can be delivered with less time. It is very exhaustive and hard phase to check all the combination of the input parameters given to authenticate the proper functioning of software system before delivering. Many issues are triggered in an application by the interaction of one or more parameters. Hence it is significant to check all the combination of N or fewer parameters in all N-way combinational input. This way of combinatorial testing will yield high guarantee software system such that all the faults have been discovered effectively. Manual Testing of this type of combinatorial inputs is impossible so there are few standard algorithms such as IPOG-C later defined as IPOGD, etc. In this paper, we are presenting the performance of Combinatorial Testing Technique called IPOG-Modified Design method with the IPOGD Technique and Manual way of test case generation. The results are evaluated for N-way combinational inputs of seven parameters. Evaluation of results shows that the IPOG-Modified Design Technique yields better performance than the IPOGD Technique and manual technique for the same input data set. Over all the IPOGD and IPOGMD Combinatorial testing methods can reduce cost, improves efficiency in software testing for numerous applications. **Keywords:** Combinatorial Software Testing Methods – Manual & IPOGD & IPOGMD .	**590-593**
102.	**Authors** — **Shreyas S, Simhadri Govindappa, C G Raghavendra, Vinayak Shastri, Yathin Patil, Mohan Kumar S** **Paper Title** — **Categorization of Silkworm based on Chitin Glands using Image Processing** **Abstract:** This paper demonstrates a prototype for highly accurate identification of the silkworm pupa (Bombyx mori) gender using optical property. The methodology is to optical beam in the near infrared spectrum that can effectively and safely penetrate the body of a silkworm pupa. After the illumination, some of the basic operations of image processing like image thresholding, contour detection, blob filtering and image inversion processes are applied to remove the unwanted image noises and at the same time highlighted the gland that distinguishes the gender in silkworm. The proof of concept is experimentally done using three 633 nm wavelength Light emitting diodes (LED's), a pi camera, and a computer. Some of the key features of this method include ease of implementation with cost reduction and high accuracy. **Keywords:** Chitin Gland, Gaussian Blurring, Thresholding, Pupa.	**594-598**
103.	**Authors** — **Kamalamma. K V, Dr. Ajeet A Chikkamannur** **Paper Title** — **Ameliorated Methodology for Base Design in Information System** **Abstract:** The pragmatic Information retrieval technique is providing the responses to the users' query depending on their choice. The clients are struggling hard to comprehend the semantic within the reports. The data recovery within common language content isn't organized and could be semantically equivocal. The unstructured data may contain non-key attributes. The joint operation takes place between the primary key and foreign key of different tables. The foreign key of one table must be the primary key of another table is the most common in a database and heavily optimized. Join is used to connect rows in another table (or even in the same table) based on the arbitrary condition for structured data but what it for unstructured data to retrieve an information? Information containing an unstructured data and Non-key attributes needs the establishment of relation between Non-key attributes as well as Non-key joins.	**599-601**

	This paper proposes a data base design to retrieve information with Non-key attributes and representing the knowledge with decision tree. From the decision tree the semiotic is extracted i.e. path from root node to leaf node. **Keywords:** Semantics, Non-key attribute, Decision tree, semiotics	
104.	**Authors**	**Gulab Sah, Rajat Subhra Goswami, Sunit Kumar Nandi**
	Paper Title	**Predicting the Popularity of Upcoming Products on E-Commerce Platforms**
	Abstract: Now a day, product ratings are very much essential for the product available online so that customers can view a product's actual rating before they are going to buy it. This is only the primary source of information for a product, and it is also essential for manufacturers, retailers to improve product quality in terms of production and sale. A rating can make it easy for consumers to figure out how much they enjoy the product. Now in case of new arrival products which have not been used by any customers or any users, the ratings not available online. We have tried to find ratings for new arrival products in this research work by identifying the quality of that product, which will assist customers before buying it. We have also examined different method that will predict the rating of the newest arrival product based on product features, description, information that are available on the e-commerce platform like Amazon, Flipchart. To achieve the defined goal, we have worked on existing data that are available for products already arrived in the market and already used by a customer. The main objective of this research is to help the customer who is going to purchase new arrival products. This is done by comparing different existing Machine Learning methods with the help of the existing data set. We have tried to find out the best method among the existing Machine learning methods and applied that method to predict the rating of the newest arrival product based on the available features. **Keywords:** Product rating, Amazon, classifiers, Support Vector Classifier, K-Nearest Neighbors, Naive Bayes classifier, Random forest Classifier, Neural network, Decision tree, Multinomial logistic regression, Confusion Matrix.	**602-609**
105.	**Authors**	**Sugandha Saxena, S N Prasad, Bhavanishankar K**
	Paper Title	**Techniques for Lung Cancer Detection from CT Images**
	Abstract: The most lethal disease found in the medical field is lung cancer and early detection of this disease has become a challenge for many doctors and diagnostics. The lung cancer contributes over 15.3% of the total number of new cases diagnosed in the recent years. Smoking and pollution are considered as the major causes of lung cancer. At present, there are huge number of tests available to detect lung cancer such as PET Scan, Computerized Tomography (CT) Scan and X-ray etc. are used to diagnose the disease. By x-ray the picture of the lungs may uncover the unusual mass or nodule. A further developed adaption found in CT scan which can uncover the small lesions in the lung that probably won't be distinguished with X-ray. Biopsy tests are done for detailed diagnosis of the disease. For accurate and better results, a data mining techniques, machine learning algorithms or deep learning algorithms could be used in the laboratories. In this survey, we have elaborated various existing techniques used so far. **Keywords:** Lung cancer, data analytics, machine learning algorithm, deep learning algorithms.	**610-615**
106.	**Authors**	**S Mamatha Jajur, Soumya N G, G T Raju**
	Paper Title	**Crop Recommendation using Machine Learning Techniques**
	Abstract: With the use of minimal resources such as fertilize water and seeds Precision Agriculture (PA) allow farmers to maximize yields. By deploying sensors and mapping fields, framers can understand their field in a better way conserve the resources being used and reduce adverse affects on the environment. Accurate recommendations for the crop to be cultivated, watering, usage of fertilizer, monitoring of pH can be adopted by PA users. By providing information, better decision making ability can be given to the farmers which is the main aim of PA. With minimal human intervention, ML provides a powerful and flexible framework for data-driven decision. The paper provides a review on set of machine learning techniques to	**616-619**

	assist the farmers in making an informed decision about which crop to grow depending on his farm's prominent attributes **Keywords:** crop prediction, crop recommendation system, smart farming, Precision Agriculture.		
107.	**Authors**	**Jayshree Ghorpade Aher, Shreyans Magdum, Nandini Sonkusakle, Parul Jaiswal, Raj Shah**	
	Paper Title	**A Machine Learning-based Approach for Predicting Unknown Pharmacointeractions**	
	Abstract: A lot of research has been done on the efficacy of machine learning algorithms in predicting the pharmacological interference between two drugs. Ordinarily, this interference depends on many factors such as the taxonomical, chemical, pharmacological or genomic similarities between the two drugs. Nevertheless, a lot of adverse events (AEs) are reported every year, due to the simultaneous consumption of two or more drugs. Much research has been conducted on the accuracy of the interference prediction based on these factors, each differing in the algorithms and factors used. In this paper, we propose a machine learning-based approach for predicting unknown drug–drug interactions based on a few of the impacting factors, that can give better results and thus, help minimise the potential harm that can be caused to society. **Keywords:** drug-drug interactions, pharmacointeraction, machine learning, DDI		**620-623**
108.	**Authors**	**Ambika P R, Bharathi Malakreddy A**	
	Paper Title	**A Comprehensive study on Laplacian Matrix Based Spectral Graph Clustering**	
	Abstract: Recent attention in the research field of clustering is focused on grouping of clusters based on structure of a graph. At present, there are plentiful literature work has been proposed towards the clustering techniques but it is still an open challenge to find the best technique for clustering. This paper presents a comprehensive review of our insights towards emerging clustering methods on graph based spectral clustering. Graph Laplacians have become a core technology for the spectral clustering which works based on the properties of the Laplacian matrix. In our study, we discuss correlation between similarity and Laplacian matrices within a graph and spectral graph theory concepts. Current studies on graph-based clustering methods requires a well defined good quality graph to achieve high clustering accuracy. This paper describes how spectral graph theory has been used in the literature of clustering concepts and how it helps to predict relationships that have not yet been identified in the existing literature. Some application areas on the graph clustering algorithms are discussed. This survey outlines the problems addressed by the existing research works on spectral clustering with its problems, methodologies, data sets and advantages. This paper identifies fundamental issues of graph clustering which provides a better direction for more applications in social network analysis, image segmentation, computer vision and other domains. **Keywords:** Clustering, Laplacian, spectral graph.		**624-628**
109.	**Authors**	**Annapurna Kattimani, Vijaylakshmi M, Channappa B Akki**	
	Paper Title	**Hybrid and Decentralized Privacy Preservation using D-anonymity and T-closeness in Social Network**	
	Abstract: Social Network (SN) knowledge is significant assets for data examination, freeing the data to the general public could reason an invasion of privacy. Privacy insurance is taken a lot of seriously than various data mining duties. The privacy problems are dealt with by several algorithms and strategies in the literature. But, perpetually there exists a trade-off between privacy and data. Our objective in this work is to design and develop a privacy-preserving solution for the social network. We have used K-anonymity and T-closeness algorithm and data anonymization. Further, data anonymization is decentralized by giving control of anonymization to the data owner. The solution is implemented on a dummy social network for testing the effectiveness of the privacy preservation solution proposed by us. **Keywords:** SN(social-networking), K-anonymity, T-closeness, Quasi-identifier.		**629-633**
110.	**Authors**	**Arun kumar Nakatha, Dr. Sathish S Kumar**	

	Paper Title	**Data Mining Techniques for Identification and Classification of Various Diseases in Plants**	
	Abstract: Data mining is currently being used in various applications, in research community it plays a vital role. This paper specifies about data mining techniques for preprocessing and classification of various disease in plants. Since various plants has different diseases based on that each of them has different data sets and different objectives for knowledge discovery. Data Mining Techniques applied on plants that it helps in segmentation and classification of diseased plants, it avoids Oral Inspection and helps to increase in crop productivity. This paper provides various classification techniques Such as K-Nearest Neighbors, Support Vector Machine, Principle component Analysis, Neural Network. Thus among various techniques neural network is effective for disease detection in plants. **Keywords:** Classification, Data Mining, K-Nearest Neighbors, Neural Network, Preprocessing, Principle Component Analysis, Segmentation, Support Vector Machine.		**634-638**
111.	**Authors**	**Pranita Mahajan, Dr. Dipti P Rana**	
	Paper Title	**Text Mining in Healthcare**	
	Abstract: In healthcare, data mining intensively and extensively becoming essential. Data mining applications can benefit all patients and the healthcare professionals. This paper starts with introducing data mining and the healthcare paradigm. This study confers various techniques of data mining in healthcare application domain. As the scope of the study is limited to text mining classification, state of art in particular to healthcare text mining classification is studied in detail with suggested improvements. Various issues and challenges owing to the type of data in healthcare are also discussed in detail with possible solutions. Finally, the paper highlights the need for personalized prescriptive systems for patients and healthcare professionals. **Keywords:** NLP, Text Mining, Healthcare, Image Processing, Mobile App, Ontology, Prescriptive analysis, Descriptive Analysis, Predictive Analysis.		**639-646**
112.	**Authors**	**Manjula L, G T Raju**	
	Paper Title	**Early detection of Diabetic Retinopathy through Machine Learning Techniques**	
	Abstract: Diabetic Retinopathy (DR) is progressive syndrome that leads to loss of vision if not detected and treated. Retina is inner tunic of the eyeball which is capillary and delicate transparent membrane. It is high developed tissue of eye which plays a major role for vision. Retina is the source for detection of many disorders. Part of retina with optic disc can be viewed through optamoloscope and termed as fundus image which is a basis of diagnosis for DR. DR can be categorized as Proliferative Diabetic Retinopathy (PDR), Diabetic Maculopathy, Non-proliferative Diabetic Retinopathy (NPDR) and Advanced Diabetic Eye Disease. Machine Learning (ML) techniques play a vital role in early detection of DR. In this paper a review on the existing techniques with open issues to be addressed is presented for diagnosing DR and model is proposed to consider the features namely Microaneurysms, Retinal Hemorrhages, Hard exudates, Cotton wool Spots, Neovascularization for classification of DR. These features can be combined with hypertension to predict other disorders like stroke, chronic heart disease, renal dysfunction, cardiovascular mortality and so on which overcome the need of other preliminary checkup. The complete profile of disorders for a diabetic patient can be deduced by the retinal fundus image. **Keywords:** Diabetic Retinopathy, Machine Learning, Retinal Fundus Images.		**647-650**
113.	**Authors**	**Karanam Sunil Kumar, N P Kavya**	
	Paper Title	**RFDM- An Efficient Approach for Video Tracking**	
	Abstract: Video tracking is a computer vision imperative task. Region-based, feature-based, deformable and model-based (RFDM) tracking algorithms are the four categories of Match-based video tracking type. This survey provides various techniques or methods to object detection, identification and recognition, more light on region-based tracking, dealing with occlusions and		**651-658**

	overlaps and insufficiencies in model-based tracking and contour model. Finally, various future studies have been recommended at the end of this paper. **Keywords:** Object tracking, Active Contour Models, Content Extraction and Filtering.	
114.	**Authors** | **Vani Ashok** **Paper Title** | **Combining Discriminant Analysis and Neural Networks for Detection of Internal Defects in Mangoes using X-Ray Imaging Technique**	
	Abstract: In today's competitive world, quality is considered as the key factor in the modern food industry and the quality of agricultural produce is of main concern for export. Specifically, quality of fruits is of major concern in the export and import industry as it has to conform to the quality norms of the corresponding country. In recent years, non-invasive imaging techniques such as Magnetic resonance imaging (MRI), X-ray, Computed tomography (CT), Nuclear magnetic resonance (NMR), Near infrared (NIR), Ultrasound and Hyper-spectral imaging are being employed to determine the quality of fruits. The "king of fruits", Mango (Magnifera indica Linn) is the most economically important agricultural crop. India being the major producer of mangoes (50% of global production) and contributing majority of mango cultivars to the world market needs economical, non-destructive methods for quality evaluation of mangoes. There is a need to develop a non-destructive system that objectively classifies the internal quality of mangoes in real time. In this paper, an X-ray based computer vision methodology is proposed to automatically detect internal defects of mangoes and classify the quality into two groups, "Defective" and "Non-defective". In the proposed methodology we built a dataset of 572 X-ray images of mangoes and validated it using Discriminant Function Analysis (DFA) predictive model which determines the group membership of each sample in the dataset based on the huge feature space extracted from the sample images. The features that best predicts the group membership were given as inputs to Multilayer Perceptron Neural Network (MLP NN) with scaled conjugate gradient optimization algorithm and the optimized MLP architecture with maximum classification accuracy was determined. The proposed model was able to classify the X-ray image samples into Defective and Non-defective groups with an accuracy of 91.3%. **Keywords:** X-ray imaging, Non-destructive, Internal Defects, Discriminant Function, Scaled Conjugate Gradient, Neural Networks	**659-665**
115.	**Authors** | **Nagesh B S, Dr. N P Kavya** **Paper Title** | **Validation Techniques for Comparing Ensemble Approaches in Polyp Detection**	
	Abstract: Endoscopy is one of the most efficient colon screening technique through which the polyps are identified and treated. This manual process of identifying the polyp has chance of missing some polyps while diagnosis. To overcome this an efficient computer aided detection technique need to designed, there are several computing techniques and algorithms available, this research article tries compare different techniques used in polyp detection and also proposes several performance evaluation metrics which can be used to find the proficiency of methods in identifying polyps in endoscopy videos. The article presents various identification methods; evaluation methods include various parameters like performance metrics. The proposed ensemble approaches are discussed in polyp detection mechanism. **Keywords:** Ambiguity, Requirements document, Software Requirements, Quality assurance	**666-670**
116.	**Authors** | **Venkatesh P, Saikat Majumder** **Paper Title** | **Deep Belief Network for Prediction of Rician Fading Channel**	
	Abstract: In this paper a novel channel prediction scheme is presented for rician fading channel. The channel prediction is done by using a Deep Belief Network (DBN) which is composed of two Restricted Boltzmann Machines (RBMs), this deep learning algorithm can produce fewer predictive errors than echo state networks and other predictive approaches. Simulation results shows that the DBN channel prediction system has a lower NMSE than the prediction of the echo state network and other conventional prediction methods and the obtained SER gap between the actual CSI and predicted CSI is small.	**671-675**

	Keywords: Channel prediction, Deep Belief network, Restricted Boltzmann Machine, Rician fading.		
117.	**Authors**	**Vanitha K S, Dr S V Uma**	
	Paper Title	**Performance Comparison of GPSR and AODV Routing Protocols in MANETS**	
	Abstract: Mobile ad hoc networks (MANETs) are collection of nodes connected through wireless medium and do not require infrastructure for operation. Network Topology keeps on changing because mobility of nodes are high. Therefore, it is important for MANETs to provide excellent routing and security features. Since MANETs do not require any pre-existing infrastructure, they are extensively used in emergency and rescue and military applications. MANETs thus will form essentially an important part in wireless networks. In this paper, Ad hoc On-Demand Distance Vector (AODV) and Greedy Perimeter Stateless Routing (GPSR) routing protocol performance is compared with respect to Throughput and E2ED and observed that there is an improvement in throughput by 11% in case of GPSR. Simulation is performed using NS3. **Keywords:** AODV, GPSR, E2ED, MANET, Throughput.		**676-678**
118.	**Authors**	**Priyanka Ahlawat**	
	Paper Title	**Key Distribution and Management in WSN Security : A State of the Art**	
	Abstract: Offering efficient key management scheme (KMS) in WSN faces many challenges that will significantly impact the design and implementation of security protocols for WSN. The goal of KMS is to provide an effective environment in which the sensor node can communicate in a secure manner. It should be able to resolve the issue of generate, allocate the cryptographic keys in WSN in an efficient and effective manner. Hence, the methods for trustworthy allocation and management of these keys are very important for security of WSN. Many KMSs have been developed in recent years. However inherent characteristics of a WSN make incorporating security a great challenge. This paper presents a comprehensive review of current state-of-the-art of KMS designed for WSN security and compare with respect to several evaluation metrics. This paper also investigates the security requirements, goals and challenges of KMS based on existing literature reviews. We also attempt to provide insight in to potential research trends in the area of WSN security and outline the approaches that are likely to play a very important role. **Keywords:** key management, Wireless sensor networks, key distribution, key revocation, rekeying.		**679-690**
119.	**Authors**	**Seemanthini K, Dr. Manjunath S S, Raghuram A S, Sneha N P**	
	Paper Title	**Detection of Video and Multimedia Copy-Move Forgery Using Optical Algorithm and GLSM Clustering**	
	Abstract: Digital Videos and multimedia copy-move forgery detection is a trending topic in multimedia forensics. Protecting videos and other digital media from tampering has become a cause of concern. Video copy-move forgery has increasingly become a type of cybercrime that is employed to using videos for various malicious purposes such as providing fake evidences in court rooms, spreading fake rumors, using it to defame a person. A lot of approaches have been proposed for detecting the traces left by any forgery caused due to the copy-move operation. In this paper, we conduct a survey on these existing approaches which are applied for the detection of copy –move videos and also for the identification forgery in the images. In some of the existing methods, the problem of copy-move video forgery has been addressed using different techniques. Techniques such as noise residue, motion and brightness gradients, optical flow techniques solve only part of the whole problem. This survey analyses the current solutions and what they offer to address this problem. **Keywords:** Noise residue, Copy-move forgery, optical flow, copy- move forgery, Motion brightness		**691-696**
120.	**Authors**	**Ashwini S Savanth, Dr. P A Vijaya, Dr. Bindu M Kutty**	

	Paper Title	**Functional Connectivity within Brain Networks of Long term and Short term Meditators**	
	Abstract: Meditation refers to a state of mind of relaxation and concentration, where generally the mind and body is at rest. The process of meditation reflects the state of the brain which is distinct from sleep or typical wakeful states of consciousness. Meditative practices usually involve regulation of emotions and monitoring of attention. Over the past decade there has been a tremendous increase in an interest to study the neural mechanisms involved in meditative practices. It could also be beneficial to explore if the effect of meditation is altered by the number of years of meditation practice. Functional Magnetic Resonance Imaging (fMRI) is a very useful imaging technique which can be used to perform this analysis due to its inherent benefits, mainly it being a non-invasive technique. Functional activation and connectivity analysis can be performed on the fMRI data to find the active regions and the connectivity in the brain regions. Functional connectivity is defined as a simple temporal correlation between anatomically separate, active neural regions. Functional connectivity gives the statistical dependencies between regional time series. It is a statistical concept and is quantified using metrics like Correlation. In this study, a comparison is made between functional connectivity in the brain regions of long term meditation practitioners (LTP) and short-term meditation practitioners (STP) to see the differences and similarities in the connectivity patterns. From the analysis, it is evident that in fact there is a difference in connectivity between long term and short term practitioners and hence continuous practice of meditation can have long term effects. **Keywords:** fMRI, functional connectivity, meditation, meditation experience.		**697-703**
121.	**Authors**	**Sandipan Paul, Joyashree Das, Madhav Ramrao Shinde**	
	Paper Title	**Comparative Study of Different Types of HTS Hysteresis Motors**	
	Abstract: The comparative study of HTS hysteresis motor with YBCO and BSCCO element in the rotor and copper conductors in the stator is proposed in this paper. Both the elements are used as rotor materials. Then the effect of each material is numerically calculated and simulated using AV formulation. Various performance constraints such as magnetic flux density, magnetic field and current density etc. of hysteresis motor and hysteresis rotor with both materials are computed. For this, two dimensional Partial Difference Equations based module of COMSOL Multiphysics has been used with two dimensional geometry with proper Neumann and Dirichlet boundary conditions. COMSOL Multiphysics is finite element based solver software. The computed constraints are evaluated with each other. **Keywords:** High Temperature Superconducting (HTS), Hysteresis Motors, Bismuth Strontium Calcium Copper Oxide (BSCCO), Yttrium Barium Copper Oxide (YBCO) Finite Element Method.		**704-707**
122.	**Authors**	**Shrinivas Biradar, G T Raju**	
	Paper Title	**Web Objects Review through Sentiment Analysis**	
	Abstract: Sentiment Analysis is the analysis of thoughts, feelings and qualities of people towards an object. Automatically recognizing user-generated content views is of great help for commercial and political use. Sentiment Analysis / Opinion Mining lets us gather information about the positive and negative characteristics of any given object / product, and we recommend the favorable and highly scoring views on the object / product to the user. Although researchers have contributed a lot towards objects review through sentiment analysis, still there are open issues needs to be addressed such as Negation Handling, Domain Generalization and Detection and Removal of Fake Reviews. This paper presents a review on the various algorithms used for Negation Handling, Domain Generalization and Detection and Removal of Fake Reviews along with a comparative study against performance metrics along with their limitations. **Keywords:** Domain Generalization, Fake Reviews, Negation Handling and Sentiment Analysis.		**708-711**
123.	**Authors**	**Nalini Sampath, N K Srinath**	
	Paper Title	**Classification methods, Deep Learning Architecture, Data source and Challenges in Detection of Breast Cancer.**	

	Abstract: Different types of cancer can be prevented, screened for and/or detected and treated at an early stage. According to recent statistics breast cancer has a mortality rate of 12.7 per one lakh women. Mutation of genes at an abnormal rate leads to cancer. Changes in the size, color, texture and constant pain are the initial symptoms of breast cancer. A person presented with these symptoms requires breast cancer screening which would help in the diagnosis. Early detection can help health care professionals to start with the treatment, thereby reducing the mortality rate. Recent advances in breast cancer detection have proven to aid both medical professional and patients in making health care decisions. In this paper image acquisition technique, classification techniques, deep learning models and data sets available are highlighted. **Keywords:** classification, dataset, deep learning, imaging modality, transfer learning	**712-716**
124.	**Authors** | **Shanthala Nagaraja, Dr. Kiran Yarehalli Chandrappa** **Paper Title** | **Topic Modelling** **Abstract:** In the history of information and technology the knowledge which was generated is stored in the form of digital technology. In present day the search engines will search based on terms and extract the list of similar documents from many topics. In this paper, the proposed Topic Modelling techniques will search based on the group of words from each document. The aim behind proposed topic modelling techniques is to comprise the topics from each of the document. The hidden topics from the list of collected text documents can be extracted using proposed probabilistic topic modelling. **Keywords:** Slot-Loaded Patch, Microstrip Patch Antenna, Global Positioning Satellite (GPS), Shorted.	**717-720**
125.	**Authors** | **A Gomathy** **Paper Title** | **A Theoretical Evaluation of the performance of Movable Head Disk Storage Devices with Various Disk Scheduling Algorithms** **Abstract:** Hard drives are the one which needs to be accessed in an efficient manner so that it is feasible to get better recital of the central processing unit. Now a day's magnetic disks are capable of providing more input output bandwidth yet a huge amount of this bandwidth is lost due to the access time of the hard disk. This paper discusses an analysis of performance of various disk scheduling algorithms with their merits and demerits **Keywords:** FCFCS, SSTFS, SCANS, C-SCANS, F-SCANS, LOOKS, C-LOOKS, S-LOOKS	**721-726**
126.	**Authors** | **Narendrakumar, K B Ramesh** **Paper Title** | **Design of Radial Artery Pulse Sensor System for Ayurveda Disease Diagnosis** **Abstract:** In today's modern world everyone will be suffering from one or another disease and to know it all doctors suggest to undergo some scanning like x-ray, MRI, city scan and some blood checkups to confirm one's health issue with his prediction. In ancient days there was no scanning and checkup instead people believed in physicians, who use treat the unhealthy persons with knowledge of medicine known as ayurveda in India and Traditional Chinese Medicine (TCM) in china. In ayurveda there are eight methods to diagnose the health status and one of it is nadi pareeksha, where nadi vaidya feels the three nadi signals vata, pitta and kapha at the wrist of a person and by feeling the palpation of these signals he predicts the health status of a person. As now a day's everyone has adopted costly and complex foreign medicine, which only tries to cure the present health issue of a subject has got hundreds of side effects, so in order to overcome this we need to follow the ayurveda practitioner. Ayurveda require a very experienced person who rarely seen in modern world, so we are trying to bring their ideas in some technical views. In this project, a non-invasive methodology is implemented to know health issue of a person and an attempt is made to bring back the ayurvedic knowledge. Where nadi signals of a subject are acquired and calculated each signal mean and peak values, which are different for different health issues and stored in a database. The incoming new subject signals mean and peak values are computed and compared with values stored in data base and then the system reports the health status of a subject.	**727-733**

	Keywords: Pulse diagnosis, Wrist pulse signal, nadi, DAQ card	
127.	**Authors** | **Shashidhara H R , Sanjay P K , G T Raju , Vinayaka Murthy** **Paper Title** | **Effective Cost Models for Predicting Web Query Execution Cost** **Abstract:** Classical query optimizers rely on sophisticated cost models to estimate the cost of executing a query and its operators. By using this cost model, an efficient global plan is created by the optimizer which will be used to execute a given query. This cost modeling facility is difficult to be implemented in Web query engines because many local data sources might not be comfortable in sharing meta data information due to confidentiality issues. In this work, an efficient and effective cost modeling techniques for Web query engines are proposed. These techniques do not force the local data sources to reveal their meta data but employs a learning mechanism to estimate the cost of executing a given local query. Two cost modeling algorithms namely: Poisson cost model algorithm and Exponential cost model algorithm is presented. Empirical results over real world datasets reveal the efficiency and effectiveness of the new cost models. **Keywords:** query optimizer, cost modeling, web query engine	**734-738**
128.	**Authors** | **Sowmya S R, Dr. Manjunath S S** **Paper Title** | **Clustering Based Categorical Data Protection** **Abstract:** At present, the number of publicly available datasets is increasing day by day. It is therefore imperative to improve the confidentiality of the data, which has become one of the main reasons for an investigation. Extended to provide effective protection techniques that hinder the disclosure of entities in datasets while preserving the usefulness of the data. A systematic approach to categorical data protection is achieved by applying groups to the dataset and then protecting each group. In this paper, we present a survey and analysis on clustering techniques. The analysis of grouping techniques can result in confidential data or outliers in groups, and effective protection methods for such groups. **Keywords:** Clustering, Categorical Data, privacy, Data mining.	**739-742**
129.	**Authors** | **Saneeep Bidwai, Nikhil Joshi, Saylee Bidwai, Uday Wali** **Paper Title** | **Comparative Analysis of Deep Learning Predictive Models for Cognitive Radio System** **Abstract:** Cognitive Radio (CR) was introduced to improve the utilization of Radio Frequencies (RF) that remain under-utilized by the primary users (licensee). The main idea behind CR is to allow un-licensed (secondary) users to occupy vacancies in licensed bands. However, CR mandates the secondary user to vacate the frequency band within a specified time after the primary user attempts to use the frequency band. CR does not expect the primary users to share their frequency usage schedules and hence the secondary users have to scan and predict the vacancy. The advantage for the secondary users is that they do not pay for utilization of band, if they are conformal to the CR specifications. CR is the next generation of smart communication systems. CR requires continuous monitoring of the intended RF band in the intended geographical area. This information may be used to predict spectral vacancies (white spaces). Certain bands, e.g. Analog TV bands, will have pre declared utilization schedules but in general, spectrum utilization is a random process and hence prediction can be difficult. However, Deep Learning (DL) techniques can improve the accuracy of prediction. Deep Learning techniques require large and clean data sets to work correctly. Such data sets are also necessary to compare achievable accuracy of prediction algorithms. Towards this end, we have created data sets that can be used for simulation, training and testing of CR over GSM band (890-960MHz). A typical file with two hour of observations will have about 1.2 million samples. More than 1000 sets of data samples have been captured from urban and rural areas in India. All the data sets have been cleaned to avoid instrument errors and statistical outliers. In this paper we have used these standardized data sets to perform a comparative analysis of three DL methods for CR, viz. Auto-encoder (AE), Long Short-Term Memory (LSTM) and Multi Layer Perceptron (MLP). Results of the comparison are discussed.	**743-748**

	Keywords: GSM, LSTM, Auto-encoder, MLP, Cognitive Radio.	
130.	**Authors** | **Chandrashekar D K, Srikantaiah K C, Venugopal K R** **Paper Title** | **MRCS: Map Reduce based Algorithm for Identifying Important Features from Economic Big Data using Chi-Square Test**	
	Abstract: In recent trend, big data analytics is a hot research topic for analyzing data for the business purposes, in which extraction of the important features from high volume of data is a hindrance job. In the current system, there are various methods available to extract the important feature, but it is not accurate in extraction of important features. To overcome this problem, in this paper, we have proposed a model called Map- Reduce based Chi-Square (MRCS) for feature selection. Next, the data preprocessing techniques and machine learning algorithms are used to generate business intelligence rules. The experimental results show that our proposed algorithm takes less execution time. **Keywords:** Big Data, Business Intelligence Rules, Chi-Square, Feature Selection, Map-Reduce.	**749-753**
131.	**Authors** | **Devaraju B M, Raju G T** **Paper Title** | **Cross-layer Planes Framework for Detection of Malicious Nodes in WSN**	
	Abstract: Cross-layer planes design is relatively new security approach for future technological era in which different parameters are analyzed across protocols stack, so that the internet connected exchange their information with utmost security. The traditional existing approaches operates at single layer security and across few cross layers on TCP/IP model. Hence intruder can monitor loop holes on victim nodes in Wireless Sensor Network (WSN), which is serious issue for sensitive data. For example, Intrusion Detection System (IDS) operates on network layer and identifies routing attacks, but it cannot respond to physical layer, MAC layer and transport layers' anomalies. Cross-layer design among few layers can monitor and detect some intrusions but this consumes more energy at node and node will become inactive early in the network. Hence, in this article, we propose a Cross-layer Planes Framework for Detecting Malicious Activities (CPFDMA) at different layers is proposed to secure the WSN as viable security framework is based on the cross-layer planes which interact all components in different layers of the protocol stack and monitor & analyze anomaly patterns, notifying them to avoid their malicious activities from the network. **Keywords:** WSN, Cross-layer Framework, Malicious Activities	**754-761**
132.	**Authors** | **Praveena Mydolalu Veerappa, Dr. Ajeet Annarao Chikkamannur** **Paper Title** | **Natural Language SQL Query Processing using Fuzzy Matching and Elimination Technique**	
	Abstract: In Structured Query Language (SQL), complex queries are difficult to write or understand by a user, because every user is not familiar with SQL. A common user can able to retrieve the information from the query databases using natural language is considered as an important research area. To improve the communication between databases application and naive user, an enhanced application with intelligent interface are needed. A fuzzy system with matching and elimination technique is designed in this research study, where SQL queries are formed from the input given by the user through several steps like noise removal, lexicon normalization and query formation. Then, the system uses the Latent Dirichlet Allocation (LDA) to extract the keywords from the input query. Finally, matching and elimination techniques are used to find the data, which is related to the input query given by end-user. When compared with the existing SQL techniques, the proposed fuzzy method achieved 91% and 90.5% accuracy, 95% and 93% precision, and 0.10 and 0.12 error rate for both 28 and 50 queries. **Keywords:** Elimination Technique, Fuzzy Matching Technique, Natural Language, Query Database, Structured Query Language.	**762-768**
133.	**Authors** | **Divya D J, Dr Prakasha S** **Paper Title** | **Comparison of Various Clustering Techniques to Medical Image**	

	Abstract: Nowadays medical imaging is becoming one of the popular techniques used to monitor human body to diagnose diseases, detect and treat injuries so that it can be treated. It helps in fetching desired information from the medical images. Clustering techniques in medical imaging is used to assist image based analysis of heterogeneous ailments by creating clusters of given population into homogeneous sub populations which helps in better understanding of the disease within each sub population. In this paper, we have discussed and compared various clustering techniques such as Fuzzy C Means clustering (FCM), Spatial Fuzzy C Means clustering (SFCM), K-Means and Particle Swarm Optimization Incorporative Fuzzy C Means clustering (PSOFCM), Gustafson Kessel (GK) clustering and Density Based Clustering of Applications with Noise (DBSCAN) to detect a tumor in human brain based on various image segmentation parameters. Accuracy of these algorithms is tested using MRI brain image. **Keywords:** Clustering techniques, Medical imaging, FCM, SFCM, K-means, PSOFCM, DBSCAN, Gustafson Kessel, multiple clustering, Brain tumor.	**769-775**
134.	**Authors**	**Shwetha K S, Dr. Chandramouli H**
	Paper Title	**An Investigation on Distributed File System: Writing Review**
	Abstract: The investigation of little documents is required to give singular clients the most recent data and improved administrations. Every one of the machines is required to be under a typical director and have the option to impart safely. Huge information is the center subject in enterprises and research fields just as for society overall. Hadoop is the most generally utilized device for huge information examination in internet-based life like Google, Facebook, Yahoo, and Amazon and so on. Hadoop essentially uses Distributed File System for the capacity of an enormous volume of unstructured, ongoing information and streams at a high speed. It has given exact significance to information stockpiling in Hadoop, however, the security of information has overlooked and exceptionally least significance was given. We have algorithms or methodologies proposed. **Keywords:** Hadoop, Distributed File System, Security, Authentication, Authorization, Encryption	**776-780**

<table>
<tr><th>Sl. No</th><th colspan="2">Abstact of Conference Papers Presented in ICDECS-2019</th><th>Page No.</th></tr>
<tr><td rowspan="4">1.</td><td>Authors</td><td colspan="2">Mrs. Sridevi K N, Dr. Prakasha S</td></tr>
<tr><td>Paper Title</td><td colspan="2">Information Retrieval through Query Clustering and Query Classification – A Review</td></tr>
<tr><td colspan="3">Abstract: Information retrieval is extracting important pattern, features, knowledge from data. As requested by users, information retrieval system facilitates the search of data and documents. The process includes identifying specific pieces of information in semi-structured and unstructured text documents and converting them to a structured database. The IR techniques can be applied to newspaper articles, web pages, scientific articles, medical notes etc. Now a days, the IR systems are used daily by various types of users. There is an enormous growth in information. To access information in an effective manner, IR systems are required. In the field of information access, Information retrieval is the emerging concept and is overtaking other traditional methods of searching. Various techniques are in use for building IR systems. Clustering and Classification are some among them. These two techniques are the main divisions of data mining processes. To manage algorithms, these are essential in the world of data analysis. These two techniques divide data into sets. This task is relevant in the current information age as there is a need of data coupling with development. In this work, an overview of developments in the Information Retrieval field is presented with a special focus on classification and clustering techniques.

Keywords: Information Retrieval [IR], classification, clustering, algorithm</td><td>1-5</td></tr>
<tr><td rowspan="4">2.</td><td>Authors</td><td colspan="2">Adwaith N S, Anagha, Kirtana Sridharan, Apoorva Kashi</td></tr>
<tr><td>Paper Title</td><td colspan="2">Linux Operating System</td></tr>
<tr><td colspan="3">Abstract: Linux provides a standard file structure in which system files/ user files are arranged. Linux provides a special interpreter program which can be used to execute commands of the operating system. A Linux distribution (often abbreviated as distro) is an operating system made from a software collection, which is based upon the Linux kernel and, often, a package management system. The software is usually adapted to the distribution and then packaged into software packages by the distribution's maintainers. Linux architecture primarily has these components: Hardware, Kernel, Shell and Utilities. Peripheral devices such as RAM, HDD and CPU together constitute Hardware layer for the LINUX operating system. The Linux File Hierarchy Structure or the File System Hierarchy Standard (FHS) defines the directory structure and directory contents in Unix-like operating systems. It is maintained by the Linux Foundation.

Keywords: Command line interface, distros (distributions), directories, kernel, open source, root, shell.</td><td>6-12</td></tr>
<tr><td rowspan="4">3.</td><td>Authors</td><td colspan="2">Nithya V, P Vaishnavi, Navya N, Shreya Mokhasi</td></tr>
<tr><td>Paper Title</td><td colspan="2">Amazon Web Service Meets Cloud Computing</td></tr>
<tr><td colspan="3">Abstract: Amazon web service (AWS) is a platform that offers flexible, reliable, scalable, easy-to-use and cost-effective cloud computing solutions. AWS is a comprehensive, easy to use computing platform offered Amazon. The platform is developed with a combination of infrastructure as a service (IaaS), platform as a service (PaaS) and packaged software as a service (SaaS) offerings. Cloud Computing is the on-demand availability of computer system resources, especially data storage and computing power, without direct active management by the user. The term is generally used to describe data centres available to many users over the internet.
This paper surveys recent research on how we can make the current IT architecture to rapidly migrate to cloud computing, to find out as to how we can make use of Local Private clouds and Public clouds and other data regarding Amazon Web Service.

Keywords: Cloud computing, Cloud architecture, Cloud storage, IaaS, PaaS, and SaaS.</td><td>16-19</td></tr>
</table>

4.	**Authors**	**Abhinav Kumar, Abhishek Kumar Singh, Gautam Singh, Mahima Mahendru**	
	Paper Title	**Random Forest-Based Detection of Malaria Parasite**	
	Abstract: This work proposes a machine learning model to detect whether a cell is affected by malaria parasite or not. In the first part of the implementation the dataset was prepared using OpenCV library to extract the features from 27000 images of cell samples. In the second part a machine learning model was developed using Random Forest Classifier algorithm. The model was able to predict whether a cell is parasitized or not with a very high accuracy of 91%. The most important achievement of this paper is that it uses highly magnified images of cells captured from electron microscope rather than using images of blood smear image from compound microscope as a data set. This methodology forms a robust as well as accurate model by reducing the bias and variance. **Keywords:** Machine Learning, Malaria, OpenCV, Random Forest.		**20-24**
5.	**Authors**	**Anusha S, N Vignesh Karthik , Sampada K S**	
	Paper Title	**Evaluation Of Employee Satisfaction Using Clustering Techniques**	
	Abstract: Human Resources are one of the important assets in the present world organizations. Their capability of facing employees' needs is very important in order to have an effective and efficient company, where people are the center of all business processes. A review about a company, be it positive or negative is the way of expressing one's thoughts about his working environment. Analysis of such reviews is highly favorable for the company to build up on their present state. Manual evaluation now seems futile and exhausting due to a wide scope of reviews. Hence, we now have the privilege to use heuristics and other automation processes to do the same task. In this paper, we discuss one such heuristic method that can be applied on a review set to identify and categorize based on the polarity of each review. Make clusters out of them and represent the present state of company by means of a plot. We also identified that the K-means clustering works the best for this use case. **Keywords:** Text generation, recurrent neural networks, LSTM, GRU, Adversarial training Machine translation		**25-29**
6.	**Authors**	**Ojaswin Mujoo, Chethana H R, Manjula L**	
	Paper Title	**Process Scheduling Using Machine Learning Approach**	
	Abstract: Process Scheduling is the backbone of any Operating System (OS) since it directly impacts the performance of the system. This paper propose the modifications for existing process scheduling algorithms viz., Shortest Job First (SJF), Round Robin (RR) and Priority Based (PB). The Machine Learning (ML) techniques used for the proposed model are k-Nearest Neighbor algorithm (k-NN) for SJF, Artificial Neural Network (ANN) for RR and PB. Deducing burst time for SJF is a challenging task which can be achieved using k-NN with chosen attributes. In order to dynamically update Quantum Time (QT) for RR and Priority for PB based on system usage, we modify the Linux kernel to leverage neural networks that can differentiate between various types of processes in order to determine the overall state of the system. This state is then analyzed to modify priorities of the existing processes in PB and to estimate QT for RR to improve scheduling efficiency. **Keywords:** Process Scheduling, Shortest Job First, Round Robin, Priority Based Scheduling, k-NN, ANN.		**30-33**
7.	**Authors**	**Supreetha H R, Ulja H A, Dr. N P Kavya**	
	Paper Title	**Efficient Cardiac Disease Prediction Using Machine Learning Techniques**	
	Abstract: Cardiovascular Diseases (CVDs) are the most common reason for a huge number of deaths in the world over the last few decades and has emerged as the most life-threatening disease, in the whole world. According to recent survey by WHO organization 17.5 million people dead each year.		**34-38**

	Accurate prediction of occurrences of heart diseases in medical field is significant work, which can be implemented using efficient Machine learning (ML) algorithms. Early detection of cardiac diseases and continuous supervision of clinicians can reduce the mortality rate. Paper provides lot information about today's modern world cardiovascular disease which is the most lethal one. Heart disease attacks a person so instantly that it hardly gets any time to get treated with. So diagnosing patients correctly on timely basis is the most challenging task for the medical fraternity and a wrong diagnosis by the hospital leads to earn a bad name and loosing reputation. The treatment is quite high and not affordable by most of the patients. The purpose of this paper is to develop a cost effective detection of cardiac disease using Machine learning techniques, as there is a need of reliable, accurate and feasible system to diagnose cardiac diseases in time for proper treatment. ML algorithms play a very important role in the field of medical science. ML algorithms and techniques have been applied to various medical datasets to automate the analysis of large and complex data. This model is based on supervised learning algorithm such as K-Nearest Neighbor which found to give very accurate prediction of the cardiac disease. **Keywords:** Heart Diseases, Machine Learning, K-Nearest Neighbor, Clustering, Classification, Eucledean Distance.	
8.	**Authors**	**Akshatha Bayyar, Kiran P**	
	Paper Title	**Analysis on detection of Rumors on online social network**	
	Abstract: Digital data is spreading through online social networks (OSN) such as Facebook, Twitter, and Sino Weibo, the interesting question is to find out the influential spreaders based on user interaction. Digital data are diffused into the network based on three aspects temporal, structural and linguistic. Digital data can be separated into two forms as rumors and non-rumor data. In this paper we survey on different techniques used for automatic detection of rumors on online social network **Keywords:** AE, DTRank, DT, DSTS, ELM, LDA, OSN, RNN, RBF, SVMTS.		**39-45**
9.	**Authors**	**Sneha K, Dr. M V Sudhamani**	
	Paper Title	**Retrieval of Food Recipes Using a Set of Ingredients**	
	Abstract: It is a react web application for food recipes which allows the users to enter a set of ingredients as input, based on which the set of recipes are given as output where images are displayed along with a link to refer a detail recipe of dishes that can be prepared. As soon as the user selects the desired recipe and clicks on one of the images the user is taken to a page where a detailed recipe is shown based on set of ingredients provided. The user is also provided with a video link to watch the recipe being prepared. By this the user gets to know how to prepare the dish. This is helpful to the user as it allows the user to choose recipe of his/her choice based on the set of ingredients that a user has at his/her home. As many people prefer healthy as well as tasty food and that too food prepared at home this web application will be helpful to the user. It provides a responsive user interface so that it can be understood easily by the user to make use of the web application. Based on search request made by the user it gives a maximum of 30 recipes to the user so that a user can prefer his/her choice to prepare the dish. The searching algorithm for inputs, provided by the user makes use of social-media based ranking algorithm. The data of recipes that are being provided to the user is hosted in remote storage location and is fetched by Food2Fork API. **Keywords:** *API, Virtual DOM*		
10.	**Authors**	**Amritha Kandiyil, L Sanjeetha , Kayak V Gornale ,Harsh Gupta**	
	Paper Title	**Evaluation of Basic Data Structures based on Time Complexity and Memory Consumption**	
	Abstract: We present to you a comparison between stacks, queues, linked lists, hash table and self-balancing BST's, which are the commonly used data structures. The introduction gives a brief summary of each of these data structures and what their various operations are and finally, the conclusion is in a tabular form mentioning which data structure is more efficient for which function.		**50-55**

	Keywords: Data Structures, Stack, Queues, Trees, Hash Table, Time complexity, Space complexity		
11.	**Authors**	**Pooja Ravi, Pragna B Rao**	
	Paper Title	**Comparision Of Bellman-Ford And Dijsktra Algorithm**	
	Abstract: The modus operandi of congregating data used by home computer network protocols in order to deliver data across confined or extensive distance connection and that which is transmittal over a digital network in the form of packets is called as packet switching. Packet switching necessitates packaging of data in meagre units (packets) that are routed from source to destination with the usage of network switches and routers. In packet switching networks, routing is the higher-level decision making that directs network packets from their source towards their destination through intermediate network nodes by specific packet forwarding mechanisms. In this article we made an analysis regarding the two pre-eminent shortest path searching algorithms, which are used in routing. They are the Bellman-Ford and Dijkstra's algorithms. The anatomization of the differentiation between the two is given concisely. **Keywords:** Relaxation, shortest distance, routing protocol, source node, destination node.		**67-58**
12.	**Authors**	**Shanmugapriya K S, Supreeth B S, Bhavani Shankar K**	
	Paper Title	**Real Time Awareness Application for Monitoring Power Consumption**	
	Abstract: Shortage of electricity is considered as one of the biggest crises in present scenario. It is our duty and responsibility for conserving electricity for our future generations. The first step towards this is educating people about their usage which makes them aware of their consumption data. The conventional method used to measure the consumption of electricity is the energy meter which has a draw back as it integrates data over a period of time, which is usually measured on a monthly basis. This method is not efficient as it does not provide real time consumption data. The proposed system provides a device and an application which help us in real time tracking and to overcome the challenges faced by the conventional method. The goal is to propose a system which is more efficient, compact and economical for domestic and commercial use. **Keywords:** ACS712, Arduino Nano, ESP8266, LCD display, WIFI module.		**59-62**
13.	**Authors**	**Shreedevi Suresh, Nayana B M, Dr. M V Sudhamani**	
	Paper Title	**Sentiment Analysis using Machine Learning Techniques: A Study**	
	Abstract: Sentiment analysis is the emotion extraction or opinion mining about different subjects like amazon, flip cart products or social issues etc. Sentiment analysis has gained more popularity in recent years, because trillions of people share their view in facebook, twitter and other social me-dia site. Tweet and reviews are the basic way of expressing the opinion. Sentiment analysis is supporting poster enter-prise to apprehend the social sentiment of their whole, product or service as trailing on-line conversation. So this paper presents a discussion about various techniques for sentiment analysis having social network as medium. **Keywords:** Sentiment Analysis, Naïve Bayes, opinion minig, Tweets.		**63-67**
14.	**Authors**	**Adyatha G U, Amrhutha A B, Shucita P, Sinchana H M, Sneha N S**	
	Paper Title	**Internet of Things-Smart Home**	
	Abstract: As the world becomes more connected through the communication devices we use, as well as the common household items and the systems that theoretically make our lives less stressful, there is an increased acknowledgement that this interconnected environment has entered the next phase of potential unlimited possibilities through what is commonly referred to as the 'Internet of Things' (IoT).Smart home systems have achieved great popularity as they increase the comfort and quality of life. Smart phones and micro controllers are extensively used to control smart home. Smart home provides homeowners security, comfort, convenience and energy efficiency by allowing them to control smart devices, often by a smart home app on their smart phone or other networked device.		**68-72**

	Fortunately, there are many ways to improve the environment by reducing electrical consumption. A home that saves energy is not only going to save your money, but it also helps in protecting the environment by using less of the earth's natural resources. This paper illustrates the working of IoT based security systems and the concept of smart home using IoT services, by embedding intelligence into sensors and actuators, networking of smart things using the corresponding technology and the wearable inertial sensing module and controlling smart home by smart phone. **Keywords:** Bluetooth technology, Home safety, Internet of Things, Smart home automation.		
15.	**Authors**	**Nandita R P, Prathika M H, Shamitha B S, Sushritha Bharadwaj D S, Varna S Rao**	
	Paper Title	**Cloud Computing**	
	Abstract: Resource sharing in a pure plug and play model that dramatically simplifies infrastructure planning is the promise of 'cloud computing'. The two key advantages of this model are ease of-use and cost effectiveness. This paper explores some of the basics of cloud computing with the aim of introducing aspects such as Realities and risks of the model, Components in the model and Characteristics and Usage of the model. Cloud computing is a computing paradigm, where a large pool of systems is connected in private or public networks to provide dynamically scalable infrastructure of application data and file storage. With the advent of this technology, the cost of computation, application hosting content storage and delivery is reduced significantly. Cloud computing is a practical approach to experience direct cost benefits and it has the potential to transform a data centre from a capital-intensive set up to a variable priced environment. The idea of cloud computing is based on very fundamental principal of 'reusability of IT capabilities'. The difference that cloud computing brings compared to traditional concepts of grid computing, distributed computing, utility computing or autonomic computing is to broaden horizons across organization applications and billed by consumption. Service comparison of two different Cloud Computing platforms: Amazon AWS and Microsoft Azure. Platforms are tested in similar virtual environments, namely for micro instances. Performance is measured by the collection benchmark program called Photonic Test Suite 3, and the results are presented for Apache and Dench benchmarks **Keywords:** Characteristics of Cloud Computing, Models of Cloud computing, Types of Cloud, Usage of Cloud in industries, Examples of Cloud Storage.		**73-78**
16.	**Authors**	**Sudhanva K J, Nagesh Raj T N**	
	Paper Title	**Augmented Learning Environment using Mixed Reality Technology**	
	Abstract: An augmented Reality (AR) system describes a class of systems which use computer electronics to intersect virtual data on to the physical world. AR environments allow the development of promising tools in several application domains. This paper defines a learning environment which uses the technology of Mixed Reality (MR). MR technology is analogous to the virtual reality (VR) technology that mixes interactive three-dimensional special effects with the physical world. This provides an opportunity to increase the functionality of conventional media such as books and other learning methods. The main driving factor behind this survey is to recommend the possibilities of advanced learning environments. Therefore, the following ar examples of how this technology can be used: 1) A Mathematics instructional material 2) An Augmented textbook, 3) A distributed medical training prototype designed to train medical practitioners' hand-eye coordination when performing surgeries. **Keywords:** Augmented reality, mixed reality, training, virtual reality.		**79-81**
17.	**Authors**	**Shubham Singh, Anant Bansal , Sampada K S**	
	Paper Title	**Age and Gender classification using Deep Neural Networks**	
	Abstract: The interest in automatic age and gender classification has increased rapidly, especially with the growth of online social networking platforms, commercial applications. Recently, deep		**82-90**

	neural networks have demonstrated excellent performances in recognizing the age and gender on human face images. But recently no one tried it on full human body images. In this paper we show that by learning human body representations through the use of deep convolutional neural networks (CNN), a significant prediction can be made about their age and gender. As convolutional neural networks have become the most powerful method for image classification. Many researchers have shown that convolutional neural networks can achieve better performance by modifying different network layers of network architecture. Moreover, the selection of the appropriate activation function of neurons, optimizer and the loss function directly affects the performance of the networks. In this study, we propose an age and gender classification system from full body images taken by cctv cameras installed on mall, shops using convolutional neural networks. The proposed networks have a simple network architecture with appropriate parameters can be used when rapid training is needed with the amount of limited training data. In the experimental study, the customly created dataset was used with 15000 different images with different gender and ages. According the experimental results, the proposed networks predicted the age and gender of the images 88.87% correctly for training and 79.13% for testing **Keywords:** Convolutional neural networks, deep learning, human body images, gender classification, age classification	
18.	**Authors**	**D.Yakshitha, Jyothshna D,Hithaishini S, Ila.S.Raj**	
	Paper Title	**Overview Of Virtual Reality**	
	Abstract: Virtual Reality is an incredible experience that makes user believe the virtual one. It creates a 3D experience. The brief description of it is given below **Keywords:** Sensorama, VR(virtualreality), EM(Electromagnetic)		**91-96**
19.	**Authors**	**Kavyashree K , Dr. Sowmyarani C N , Dr Dayananda P**	
	Paper Title	**Detection of TCP Attacks - An Overview**	
	Abstract: In Communication networks, the information obtained by critical vulnerabilities lead to dangerous attacks called TCP (Transmission Control Protocol) Side Channel attacks. If the guess of these tuples of TCP is correct, an attacker can spoof the packet which changes the server's state. Due to these attacks it is possible to obtain the details of four tuples of TCP such as Sequence number, Acknowledgement number, Global IPID (Internet PtotocolIdentification) Counter and port numbers. After obtaining these tuples, this may further help for an attacker to target the required client. These attacks help an off path attacker to port scans to get round trip time and also to detect how many packets are exchanged. Hence obtaining these tuples plays an important role in network security. This paper provides the detail discussion about various TCP attacks. The comparison of TCP attacks with respect to requirement, Mitigation techniques and limitations are discussed. **Keywords:** Side channel attack, Global IPID Counter, Acknowledgement number and Round trip time.		**97-105**
20.	**Authors**	**Mrs.Sudha V Salake, Dr. Shivaprakash, Sharada M Kori, Sharada G Kulkarni, Shubada S Kulkarni**	
	Paper Title	**Third Eye For The Blind – An Iot Application**	
	Abstract: Vision for the blind is an innovation which will help the visually impaired people to move around and go from one place to another with speed and confidence by becoming aware of nearby obstacles.This device is circuited with the Arduino board and includes sensors , LEDs and buzzers.The LEDs and thebuzzer are connected to the Arduino and similarly the ultrasonic sensors are also connected to the Arduino board.When the sensors detects the obstacles the device will notify the user through vibration and sound beeps.Using this , visually impaired can detect the objects around them and can travel easily. **Keywords:** LEDs, Arduino board, Sensor and detector		**106-113**

21.	**Authors**	**Chethan J, Santhosh Kumar, Dr. M V Sudhamani**	
	Paper Title	**Study on effectiveness of treatment of Autism Spectrum Disorder using Virtual Reality**	
	Abstract: Autism Spectrum Disorder (ASD) is a development neurological disorder which affects behaviour and communication. It is highly prevalent in children and is said to affect 1 in 59 youngsters, 1 out of 37 boys and 1 out of 151 girls. Boys are 4 times more probable to be diagnosed with autism spectrum disorder as compared to girls as of 2018 statistics by the CDC [Centres For Diseases Control and Prevention]. Virtual Reality (VR) is a simulated experience based technology which has set its foot in the medical Sector already. Some papers can be found which review the VR-based treatments in ASD, but most of them do not focus on the comparison of VR-based treatments with traditional treatment practices. The potential of VR to help children cope up with ASD is both high and hopeful. Constant validations in the further studies are must to state that VR is effective in treatment of Autism Spectrum Disorder. **Keywords:** classification, dataset, deep learning, imaging modality, transfer learning. Autism Spectrum Disorder, Virtual Reality, Autism, Rehabilitation, Sentimental Analysis, Assistive Technology.		**114-118**
22.	**Authors**	**Mrs. Rashmi M , Mr. Manoj M , Mrs. Reshma Jakabal**	
	Paper Title	**Distributed Denial of Service (DDoS) Attack Detection With Mitigation Approaches: A Survey**	
	Abstract: Denial of Service attack (DoS) forms a long lasting technique for traditional networks such as HTTP network and the cloud environment which as higher priority in this smart world. These malicious attack can be enhanced using Distributed Denial of Service (DDoS) attacks that causes huge damage. Distributed Denial of Service (DDoS) attack present a very serious threat to the stability of the internet and can be so powerful that they can easily deplete the computing resources or bandwidth of the potential targets. This paper presents an overview of DoS attack that follows DDOS attack understanding, with its categories as discussed in earlier papers till now by the researchers. But here we are trying to detect all these attacks withefficient solution approaches as discussed in the paper below. **Keywords:** DoS, DDoS, Botnet, Flooding, Playbook, ISP,Bandwidth, Information Stealing.		**119-123**
23.	**Authors**	**Shanthakumar H C , Dr. Nagaraja G S**	
	Paper Title	**Fast Biometric Face Recognition And Integration Using Machine Learning Techniques**	
	Abstract: Nowadays digital protection has become greater prominence for daily activities, it's far vital for people to keep extra passwords in their mind and carry extra playing cards with themselves. Such practices are getting much less stable and realistic, as a consequence leading to an growing interest in techniques associated with biometrics systems. Biometrics structures are the structures which keep bodily residences of humans in electronic surroundings and enable them to be recognized by using the stored electronic records moment which is needed. In the beyond, numerous popular face authentication approaches had been proposed, although the first-rate majority of them use complete frontal faces the use of Principal Component Analysis (PCA), and for measuring the popularity costs. In this paper, we discuss some novel experiments for instant face reputation the usage of device mastering strategies, we have a look at the charge of recognition subject to the various components of the face together with the eyes, mouth, nose and the brow. Characteristic extraction on the face is achieved by the use of Histogram of Gradients (HOG) which essentially stores the edges of the face as well as the directionality of those edges. HOG is an effective shape of function extraction due to its excessive overall performance in normalizing local comparison. Lastly, schooling and category of the facial database is carried out the usage of the multi-level SVM in which every unique face within the facial database is a category. We try to use this facial recognition device on four units of databases, the AT&T, YALE B, VGG, and CASIA face database and will analyze the results **Keywords:** Biometric Recognition, Face Recognition, Machine Learning, Convolution Neural		**124-131**

	Networks		
24.	**Authors**	**Karthik B U, Varishta Vastav K L, Krutharth K J, Nuthan Kumar H R, Chandrika J**	
	Paper Title	**Machine Learning Based Approach for Assessment of Crop Yield**	
	Abstract : The agriculture plays a dominant role in the growth of the country's economy. Climate and other environmental changes have become a major threat in the agriculture field. In India, agriculture is largely influenced by rainwater which is highly unpredictable. Agriculture growth also depends on diverse soil parameters, namely Nitrogen, Phosphorus, Potassium, Crop rotation, Soil moisture, Surface temperature and also on weather aspects which include temperature, rainfall, etc. Weather forecast data obtained from IMD (Indian Metrological Department) such as temperature and rainfall and soil parameters repository give insight into which crops are suitable to be cultivated in a particular area. Machine learning (ML) is an essential approach for achieving practical and effective solutions for this problem. Several methods of predicting and modelling crop yields have been developed in the past with varying rate of success, as these don't take into account characteristics of the weather, and are mostly empirical. In the present project a software tool named 'Crop Advisor' has been developed as a user-friendly application for predicting the influence of climatic parameters on the crop yields. The proposed system will integrate the data obtained from repository, weather department and by applying machine learning algorithm:C4.5 algorithm, which is used to find out the most influencing climatic parameter on the crop yields of selected crops in selected districts of Karnataka. This provides a farmer with variety of options of crops that can be cultivated. Thus, the project develops a system by integrating data from various sources, data analytics, prediction analysis which can improve crop yield productivity and increase the profit margins of farmer helping them over a longer run. **Keywords:** Climate, Agricultural productivity, Data Analytics, Prediction, C4.5 algorithm.		**132-136**
25.	**Authors**	**Kavya D N, Rakshita Chinnanagappa, Ranjitha D N , SiriSanjana N, Chandrika Ramesh**	
	Paper Title	**Voice Based Email System For Visually Impaired People**	
	Abstract: Internet has become one of the basic pre-requisites in everyday life. Every human being is widely using the internet for accessing required information. However, visually challenged people cannot use internet to obtain the required information. The advancements in computer technologies has allowed the visually impaired people across the globe to use internet. The main idea of the paper is all about Voice based Email system that can be used by a visually impaired person to access e-mails in an efficient manner. It has enabled them to use the email technology. Currently, visually challenged people are unable to use computer technologies because of the fact that using them requires keyboard which is not possible for them. This is very true especially in the case of social networking, which these people will not be able to do without external aid or help. Here, the paper describes the voice based e-mail architecture which can be used by the visually impaired people easily and efficiently to send and receive emails. **Keywords:** Text to Speech, Speech To Text, Automated Speech Recognition, Interactive Voice Response.		**137-142**
26.	**Authors**	**Nagesh Raj T N, Chethan J, Santhosh Kumar**	
	Paper Title	**Neurological Rehabilitation of stroke patients using Virtual Environment**	
	Abstract : Stroke is presently one of the major reasons of incapacity and death all over the world, and stroke patients experience irreparable functional deficiency and sometimes cognition underperformances, they are related with a decreased standard of living which includes complications in social and interpersonal relationships. It is well understood that patients who suffer from stroke have very less control of their upper body as major symptom, and patients also experienced motor-sensory deficits that hinder their daily activities. Stroke patients have the increased risk of dementia by up to 4-12 times, and around 69% of patients have a post-stroke cognitive deficiency. Stroke rehabilitation has improved drastically over the years but needs to develop new methodologies to help individuals gain a greater level of functional independence.		**143-146**

	Neurological Rehabilitation using VR provides a new engaging and innovative solution by immersing the patient in various therapies. VR based 3D exercises help to stimulate their brain and help form new neural pathways to aid in recovery. Neurological Rehabilitation using VR has developed several virtual reality therapy exercises that have become a part of the daily therapy plans created by therapists. **Keywords:** Stroke Rehabilitation, Virtual Reality, Paralysis, Spinal cord injury, Augmented Reality.	
27.	**Authors** — **Mr. Manoj M , G Shashak , Dr. N P kavya** **Paper Title** — **Classification Using Random Concept On A Very Large Data Set With Application: A Survey**	
	Abstract : Data mining is the powerful tool for extracting the knowledge from large data repositories. The Classification is one of the major techniques used for categorization of data objects from large database[1]. Decision tree technique mainly used for Classification, it make use of tree structure to visualize decision making rules. The major task performed in expert systems is to use inductive methods to the given values of attributes of an entity to identify best classification with the support of decision tree rules. It forms an effective method to represent, improve and evaluate the performance of algorithms, by various features like simplicity, no parameters, comprehensibility, and being able to handle different types of data. The objective of this paper is to compare and evaluate decision tree algorithms and applications of it as a conclusion .The third section in the paper describes about the ID3 classical algorithm .The fourth section of the paper discusses about C4.5 Algorithm and the fifth section of the paper explains about comparison between above Algorithm and by conclusion with J48 as the best Algorithm in Decision tree. We also deal with k-nearest neighbor classifier, Naive Bayes, SVM , Random Forest etc., using random concept. . **Keywords:** Data mining, Classification, Decision tree, ID3 , C4.5, CART , Regression, Information Gain, Gini Index, Gain Ratio and Pruning, k-nearest neighbor classifier, Naive Bayes, SVM , Random Fores.	**147-154**
28.	**Authors** — **K Hemanth Raju, Manish Prasad, Arup Abhishek** **Paper Title** — **Automatic Number Plate Detection**	
	Abstract : Number plate recognition system is a system in which registration number is automatically detected by the detected and characters is recognized. This system can be developed using template matching and system. The number of the vehicle is unique for each of feature extraction but using machine learning them so it is of most importance in traffic management and crime control.it is also used in tollbooths for automatically recording the numbers of the vehicles and makes the system more accurate by training model in this method. In the proposed method we use connected component analysis to detect the license printing in the bill which otherwise is a tedious job for humans to write each of these and make a entry in the bill. It is useful for identifying the vehicles plate and we train the models of images to detect the output and prediction of characters on the plates becomes useful. which violate traffic rules and to achieve computerized surveillance. In this system we capture the image of the vehicle and process the image accordingly and read the characters in the plate . **Keywords:** Machine Learnung, Traffic management and crime control	**155-160**

Program Schedule

Day	Event	Time	Details
19th Dec 2019	**Registration / Breakfast**	08.30 – 09.15	Ground Floor / Cellar Hall: Academic Block – IV
	INAUGURATION and **Distinguished Talk**	09.15 – 11.00	Chief Guest: **Dr. Karisiddappa**, Vice Chancellor, VTU, Belagavi Guest of Honor: **Mr. Ramesh C Pathak**, Chief Architect IBM, Bengaluru
	Invited Talk	11.00 – 11.45	Speaker: **Dr. S S Iyengar**, Ryder Professor and Director of School of Computing and Information Sciences at Florida International University (FIU), Miami, Florida, USA
	Coffee/Tea Break	11.45 – 12.00	Second Floor Hall: Academic Block – IV
	Technical Paper Presentation Session - 1	12.00 – 01.15	6 parallel sessions, 7 papers / session = 42 papers, Hall: Class Rooms - Ground Floor
	Lunch Break	01.15 – 02.00	Cellar Hall: Academic Block – IV
	Tutorial Session - 1	02.00 – 03.15	Speaker: Dr. Mohith P Tahiliani, Assistant Professor, NITK, Surathkal, Karnataka Topic: *Advances and Research Avenues in Networking and Tools*
	Coffee/Tea Break	03.30 – 03.45	Second Floor Hall: Academic Block – IV
	Technical Paper Presentation Session - 2	03.45 – 05.00	6 parallel sessions, 7 papers /session = 42 papers, Hall: Class Rooms - Ground Floor
	Break	05.00 – 06.00	
	Cultural Program	06.00 – 07.15	Performance by RNSIT Students/Staff Hall: Academic Block – IV
	Banquet Dinner	07.15 – 08.30	Open Air Ground @ RNSIT, Bengaluru
20th Dec 2019	**Breakfast**	08.30 – 09.00	Cellar Hall: Academic Block – IV
	Technical Paper Presentation Sessions - 3	09.00 – 10.15	6 parallel sessions, 7 papers /session = 42 papers, Hall: Class Rooms - Ground Floor 1 exclusive session through SKYPE Hall: Hi-Tech Lab, Academic Block-II
	Tutorial Session - 2	10.30 – 11.45	Speaker: Mr. Sidharth Patil, Expert Technologist, Hewlett-Packard Enterprise, Bengaluru Topic: *Intelligent Data Centers for next generation AI based Applications*
	Coffee/Tea Break	11.45 – 12.00	Second Floor Hall: Academic Block – IV
	Technical Paper Presentation Sessions - 4	12.00 – 01.15	4 parallel sessions, 7 papers /session = 28 papers, Hall: Class Rooms - Ground Floor
	Research Conclave	12.00 – 01.15	Presentations on Research Proposals by Research Scholars 3 parallel sessions, 7 Scholars /session = 21 Scholars, Hall: Class Rooms - Ground Floor
	Lunch Break	01.15 – 02.00	Cellar Hall: Academic Block – IV
	Panel Discussion	02.00 – 03.30	Topic: ***Impact of AI and ML on Digital Science and Engineering*** Chair Person: Dr. T N Nagabhushan, Principal, SJCE, Mysuru Members: Prof. K Gopinath, Professor, Computer Science & Automation, IISc, Bengaluru Mr. Aadithya Hatwar Hosabettu, Lead Data Scientist, Ola Data Sciences, Ola, Bengaluru Mr. Manikantan, CTO, Director, Ab Stream, Bengaluru Mrs. Rathnaprabha T M, Director, Head of Innovation and Digital Transformation, Society General in India and Romania, Bengaluru
	VALEDICTORY FUNCTION	03.30 – 04.30	Chief Guest: Dr. T N Nagabhushan, Principal, SJCE, Mysuru
	High-Tea	04.30 – 05.00	Second Floor Hall: Academic Block – IV

Presentation Schedule | Day – 1 | Theme: Data Engineering (Track 1)				**Venue: Hall – 1, Ground Floor, ACA BLK - IV**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chairs**	**Coordinators**
19th Dec 2019	**Session – 1:- 12.00 pm – 01.15 pm**	DE-102	Distributed Streaming Storage Performance Benchmarking: Kafka and Pravega	Mr. Sanjay Kumar N V, Dr. Keshava Munegowda	**Dr. Shreedhara K S** Principal, Prof., Dept of CSE, UBDTCE + **Dr. Girijamma H A** Prof., Dept of CSE, RNSIT, Bengaluru	Prof. Sunil Kumar K + Prof. Ravikumar
		DE-103	Hybrid K Mean Clustering Algorithm for Crop Production Analysis in Agriculture	Vandana B, Dr. S Sathish Kumar		
		DE-104	Hybrid and Decentralized Privacy Preservation using D-anonymity and T-closeness in Social Network	Annapurna Kattimani, Vijaylakshmi M, Channappa B Akki		
		DE-106	Quality Assurance Techniques in SRS Documents	Prerana Chaithra, Dr. Shantharam Nayak		
		DE-513	AGE and gender Classification using deep neural networks	Shubham Singh		
		DE-517	Distributed Denial of Service (DDoS) Attack Detection With Mitigation Approaches: A Survey	Rashmi M, Manoj M, Reshma Jakabal		
		DE-113	Text Generation using Neural Models	Khushboo Lathia, Mahesh Maurya		
		DE-126	Depression Analysis using Machine Learning Based on Musical Habits	Suyoga Srinivas, Naveen N Bhat, Yashwanth Venkat Chandolu		

Presentation Schedule | Day – 1 | Theme: Data Engineering (Track 2)				**Venue: Hall – 2, Ground Floor, ACA BLK - IV**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chairs**	**Coordinators**
19th Dec 2019	**Session – 1:- 12.00 pm – 01.15 pm**	DE-176	Exception Included, Ordered Rule Induction from the Set of Exemplars (ExIORISE)	Sayan Sikder, Sanjeev Kumar Metya, Rajat Subhra Goswami	**Dr. Ramesh B** Prof., Dept of CSE, MCE + **Dr. Kiran P** Prof., Dept of CSE, RNSIT, Bengaluru	Prof. Ramyashree + Prof. Sudha
		DE-130	Task Selection for Scheduling Using Hadoop Scheduler	D C Vinutha, Dr. G T Raju		
		DE-116	Meteorological Data Analysis of Bangalore Region for 30 Years using Artificial Neural Networks (ANN)	Prajwala T R, Dr. D Ramesh, Dr. H Venugopal		
		DE-120	Reconfigurable FPGA Architecture for Cryptographic Hashing Algorithms	Madhukar M, Nagesh Kumar D N, Dr. M C Hanumantharaju, B M Chandrashekar, Kajol R		
		DE-121	Route Recommendation System based on Safety Metrics and Route Profiling	Kripa Sekaran, Priyanka K, Pooja R		
		DE-122	Design and Development of Techniques for Equipment Health Monitoring System	Vasireddy Prabha Kiranmai, Sharmitha S Bysani, Vijaya Kumar B P, Kusuma S M		
		DE-156	Prediction of Solid Garbage Waste Generation in Smart Cities using Naive Bayes Algorithm	Rashmi G,S Sathish Kumar		
		DE-199	Classification Using Random Concept On A Very Large Data Set With Application: A Survey	G Shashank, N P Kavya		

Presentation Schedule | Day – 1 | Communication Systems and Networking (Track 1)				**Venue: Hall – 3, Ground Floor, ACA BLK - IV**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chairs**	**Coordinators**
19th Dec 2019	**Session – 1:- 12.00 pm – 01.15 pm**	CS-410	Vibration Guided Automatic Vision for Enhanced Security	Ipsita Sanyal, K R Dhavana, Kailash T V, Kruthika R, Dr. Bhavanishankar K	**Dr. Gowri Shankar** Prof., Dept of CSE, BMSCE, Bangalore + **Dr. Uma SV** Prof., Dept of ECE, RNSIT, Bengaluru	Prof. Medha Gouraya + Prof. Santhosh
		CS-404	Comparative Study of Different Types of HTS Hystersis Motors	Joyshree		
		NW-324	Detection of TCP Attacks - An Overview	Kavyashree K, Dr Sowmyarani C N, RVCE		
		NW-322	Design and Development of an Energy efficient algorithm for Data Aggregation in Wireless Sensor Network using Unsupervised Learning	Anitha C L, Dr R Sumathi		
		NW-327	Performance Analysis of Ad-Hoc Networks using Statistic Mechanics	Mr. Anil Kumar and Dr. B I D Kumar		
		NW-308	Open Issues in Secure Vertical Handoff Techniques for Next Generation Wireless Networks	Nagesha A G, Mahesh G, Gowrishankar		
		NW-309	MAR Worm: Secure and Efficient Wormhole Detection Scheme through Trusted Neighbour Nodes in VANETs	Mr. Mahabaleshwar Kabbur, Dr. V Arul Kumar		
		NW-311	Research Challenges and QoS Provisioning MAC Protocol for Cyber Physical Systems	Saritha I G, Rajeshwari Hegde.		

Presentation Schedule | Day – 1 | Communication Systems and Networking (Track 2)					**Venue: Hall – 4, Ground Floor, ACA BLK - IV**	
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chairs**	**Coordinators**
19th Dec 2019	**Session – 2:- 12.00 pm – 1.15 pm**	NW-325	Cross-layer Planes Framework for Detection of Malicious Nodes in WSN	Devaraju B M, Raju G T	**Prof. Mageshwaran** Director, Training and Placement, GAT, Bengaluru + **Dr. Shashidhar H R,** Prof., Dept of CSE, RNSIT, Bengaluru	Prof. Chetan (CSE) + Prof. Ramesh
		NW-304	Performance Enhancement of Rectangular Micro Strip Antenna with Different Substrate Materials	Satyanarayana R, Dr. Shankaraiah		
		DE-189	Implementation of Parallelized K-means and K-Medoids++ Clustering Algorithms on Hadoop Map Reduce Framework	Maithri .C, Dr. Chandramouli .H		
		DE-191	Deep Learning Approach for Psychological State Diagnosis	Chandan A, Ajay Umakanth, Adarsh N, Dr. Girijamma H A.		
		DE-193	Early Detection of Depression in Women using Machine Learning Approaches	Vidya Y, G T Raju		
		DE-196	Depression Predictor Model for Farmers Using Machine Learning Techniques	Dr. Mallikarjun H M, Akshay Chhetri, Apoorva G S, Gowri Jadhav, Sheetal B V		
		DE-501	Agriculture Commodity Price Forecasting Using ML Techniques	Varun R, Neema N, Sahana H P, Sathvik A, Mohammed Muddasir		

Presentation Schedule | Day – 1 | Theme: Image Processing (Track 1)				**Venue: Hall – 5, Third Floor, ACA BLK - IV**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chairs**	**Coordinators**
19th Dec 2019	**Session – 1:- 12.00 pm – 01.15 pm**	IP-210	Sensor and Feature Level Fusion of Thermal Image and ECG Signals in recognizing Human Emotions	C M Naveen Kumar G Shivakumar	**Dr. Parameshachari B D** Prof. & HOD, Dept of TE, GSSSIETW, Mysore + **Dr. Vipula Singh** Prof. & HOD, Dept of ECE, RNSIT, Bengaluru	Prof. Swathi + Prof. Tejaswini
		IP-211	Sparse representation based multi object tracking using GPU	Anuja Kumar Acharya, Rajalakshmi Satapathy , Biswajit Sahoo		
		IP-206	Liver and Tumor Segmentation Techniques for CT Abdominal Images	Hema N, Laxmidevi Noolvi, Dr. M V Sudhamani		
		IP-207	Detection of Video and Multimedia Copy-Move Forgery Using Optical Algorithm and GLSM Clustering	Prof. Seemanthini K, Dr. Manjunath S S, Raghuram A S, Sneha N P		
		IP-213	Text Extraction and Recognition in Natural Scene Images using Contourlet Transform and PNN	Shivananda V Seeri, P S Hiremath, J D. Pujari, Prakashgoud Patil		
		IP-232	Functional Connectivity within Brain Networks of Long term and Short term Meditators	Ashwini S Savanth, Dr. P A Vijaya, Dr. Bindu M Kutty		
		IP-231	Object Detection Techniques in Videos	Kusuma S, Dr. M V Sudhamani		

Presentation Schedule | Day – 1 | Theme: Image Processing (Track 2)				**Venue: Hall – 6, Third Floor, ACA BLK - IV**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chair**	**Coordinators**
19th Dec 2019	Session – 1:- 12.00 pm – 01.15 pm	IP-215	A Study on AI-Based Attendance Monitoring	K P Naveen Reddy, Alekhya T, Sushma Manjula T, Rashmi K	**Dr. Vijaya P A** Prof. & HOD, Dept of ECE, BNMIT, Bengaluru + **Dr. Mallikarjuna** Prof., Dept of EIE, RNSIT, Bengaluru	Prof. Chandrashekar + Prof. Vinutha
		IP-217	Retrieval of Food Recipes Using a Set of Ingredients (conference)	Sneha K, Dr. M. V. Sudhamani		
		IP-218	RFDM-An efficient approach for video tracking	Karanam Sunil Kumar, N P Kavya		
		IP-219	Combining Descriminant Analysis and Neural Networks for Detection of Internal Defects in Mangoes using X-Ray Imaging Technique	Vani Ashok		
		IP-221	Techniques for Lung Cancer Detection from CT images	Sugandha Saxena, S N Prasad, Bhavanishankar K		
		IP-222	Categorization of Silkworm based on Chitin Glands using Image Processing	Shreyas S, Simhadri Govindappa		
		IP-205	Segmentation of Liver from CT Abdominal Images	Hema N, Dr. M V Sudhamani		
		IP-230	Parametric Approaches to Multispectral Image Classification using Normalized Difference Vegetation Index	Keerti Kulkarni , Dr. P A Vijaya		

Presentation Schedule | Day – 1 | Theme: Data Engineering (Track 4)				**Venue: Hall – 1, Ground Floor, ACA BLK - IV**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chair**	**Coordinators**
19th Dec 2019	**Session – 2:- 03.45 – 05.00**	DE-195	Neurological Rehabilitation of stroke patients using Virtual Environment	Nagesh Raj T N,Chethan J, Santhosh Kumar	**Dr. Bharathi Malakreddy** Prof & HOD Dept of AI&ML, BMSIT, Bengaluru + **Dr. Satish Kumar. S** Prof., Dept of ISE, RNSIT, Bengaluru	Prof. Vanishree + Prof. Reshma Jakbal
		DE-198	Efficient Cardiac Disease Prediction Using Machine Learning Techniques	Supreetha H R , Ulja H A , Dr. N P Kavya		
		DE-502	Sentiment Analysis using Machine Learning Techniques: A Study	Shreedevi Suresh, Nayena BM, Dr M V Sudhamani		
		DE-506	Internet of Things-Smart Home	Adyatha.GU, Amrhutha.AB, Shucita.P, Sinchana.HM, Sneha.NS		
		DE-511	Cloud computing	Nandita .R.P. Prathika .M.H. Shamitha .B.S. Sushritha Bharadwaj .D.S. Varna .S. Rao		
		DE-512	Augmented Learning Environment using Mixed Reality Technology	Sudhanva k j, nagesh raj		
		DE-141	LEA 192: High SpeedArchitecture of Lightweight Block Cipher	Zeesha Mishra, Shubham Mishra, Bibhudendra Acharya		
		DE-184	Predictive Analysis of IPL Match Winner Using Machine Learning Techniques	Ch Sai Abhishek, Ketaki V Patil, P Yuktha, Meghana K S, Dr. M V Sudhamani		

Presentation Schedule | Day – 1 | Theme: Data Engineering (Track 3)				**Venue: Hall – 2, Ground Floor, ACA BLK - IV**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chair**	**Coordinators**
19th Dec 2019	**Session – 2:- 03.45 pm – 05.00 pm**	DE-180	Assessment of E-Readiness and Effectiveness of E-Governance Projects In Satara District, Maharashtra State In India	Laxman L Kumarwad	**Dr. Keshava Munegowda** Prinicipal Software Engineer, EMC Corporation, Bengaluru + **Dr. Kavya N P** Prof., Dept of CSE, RNSIT, Bengaluru	Prof. Sreenivas Biradar + Prof. Chetan J
		DE-128	IoT Door Lock Security System Using Google Assistance	Priyanka G, Rachana J , Vijayalakshmi N, Abhisheka G S, Vinutha D C		
		DE-134	Evaluation of Basic Data Structures based on Time Complexity and Memory Consumption	Amritha Kandiyil		
		DE-143	Linux operating system	Advaith		
		DE-101	A Comprehensive study on Laplacian Matrix Based Spectral Graph Clustering	Ambika P.R, Bharathi Malakreddy A		
		DE-131	IoT Based Flow Valve Control and Accounting System	Vijaykumar M, Vishnu Shivalingappa Toragall, Gagana P Rao, Kavya G V, Vinutha D C		
		DE-168	Random Forest-Based Detection of Malaria Parasite	Abhinav Kumar, Abhishek Kumar Singh, Mahima Mahendru, Gautam Singh		
		DE-170	Evaluation of employee satisfaction using clustering techniques	Anusha S, N Vignesh Karthik Sampada K S		

Presentation Schedule | Day – 1 | Communication Systems and Networking (Track 3)				**Venue: Hall – 3, Ground Floor, ACA BLK - IV**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chair**	**Coordinators**
19th Dec 2019	Session – 2:- 3.30 pm – 5.00 pm	CS-412	Real Time Awareness Application for Tracking Power Consumption	Shanmugapriya K S, Supreeth B S, Bhavanishankar K	**Dr. Khodanpur** Prof., Dept of ISE, DSCE, Bengaluru + **Dr. Anjan Kumar K,** Prof., Dept of CSE, RNSIT, Bengaluru	Prof. Nayana + Prof. Manoranjan
		CS-413	A Theoretical Evaluation of the performance of Movable Head Disk Storage Devices with Various Disk Scheduling Algorithms	A Gomathy		
		CS-415	Design of Radial Artery Pulse Sensor Sysgtem and Analysis for Ayurveda Disease Diagnosis	Narendra Kuamar, K B Ramesh		
		CS-417	Voice Based Email System For Visually Impaired People	Kavya D N,		
		CS-418	Shuddhi -A Cleaning Agent	Shashank R, Shreyas B, S Shashank , Yashwanth Venkat Chandolu, Dr. Bhavanishankar K		
		CS-419	Comparative Analysis of Deep Learning Predictive Models for Cognitive Radio System	Saneeep Bidwai, Nikhil Joshi, Saylee Bidwai, Uday Wali		
		DE-503	Effective Cost Models for Predicting Web Query Execution Cost	Shashidhara H R , Sanjay P K , G T Raju , Vinayaka Murthy		

Presentation Schedule | Day – 1 | Communication Systems and Networking (Track 4)				**Venue: Hall – 4, Ground Floor, ACA BLK - IV**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chair**	**Coordinators**
19th Dec 2019	Session – 2:- 03.30 pm – 05.00 pm	NW-314	Design Environment for Verilog Module Analysis using Open Source Tools	Uma R, Sarojadevi H, Sanju V	**Dr. Prasad S N** Prof., Dept of ECE, Reva University, Bengaluru + **Dr. Sudhamani M J** Prof., Dept of CSE, RNSIT, Bengaluru	Prof. Chetana (CSE) + Prof. Akshata
		NW-315	Deep Belief Network for Prediction of Rician Fading Channel	Venkatesh P, Saikat Majumder		
		NW-319	Forward Error Correction for Gigabit Automotive Ethernet using RS (450, 406) Encoder	Akhilesh Yadav, Poonam Jindal, Devaraju Basappa, Mahendra Prakashaiah		
		NW-320	Comparision Of Bellman-Ford And Dijsktra Algorithm	Pooja Ravi, Pragna B Rao		
		NW-321	Key Distribution and Management in WSN Security : A State of the Art	Priyanka Ahlawat		
		NW-323	Performance Comparison of GPSR and AODV Routing Protocols in MANETS	Vanitha K S, Dr S V Uma		
		IP-203	Evaluation of Object Segmentation Techniques for Object Based Image Retrieval	Laxmidevi Noolvi, Hema N, Dr. M.V. Sudhamani		

Presentation Schedule | Day – 1 | Theme: Image Processing (Track 3)				**Venue: Hall – 5, Third Floor, ACA BLK - IV**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chair**	**Coordinators**
19th Dec 2019	Session – 2:- 3:30 pm – 5:00 pm	IP-225	Validation Techniques for Comparing Ensemble Approaches in Polyp Detection	Nagesh B S, Dr. N P Kavya	**Dr. Ashoka D V** Prof., Dept of ISE, JSSATE, Bengaluru + **Dr. Rajani Honnagar** Prof., Dept of ECE, RNSIT, Bengaluru	Prof. Rashmi + Prof. Kusuma
		IP-226	Smartphone enabled Counterfeit Note Detection using Siamese Network	Dhanush C, Adith Kumar B A, Ajay Umakanth, Ajay Deshpande, Dr. Bhavanishankar K		
		IP-233	Performance Analysis of Classification of Liver Tumors using Support Vector Machine and Rough Set based Classifiers	Aravinda H L, Dr. Sudhamani M V		
		IP-234	CBIR System for Lung Nodule Retrieval and Analysis	Ashwini Dasare, Harsha S		
		IP-212	Virtual Reality (conference)	D.Yakshitha, Jyothshna D,Hithaishini S, Ila.S.Raj.		
		IP-209	Content Based Image Retrieval system using combination of color and shape Features, and Siamese Neural Network	R Rajkumar, Dr. M V Sudhamani		
		IP-237	Fast Biometric Face Recognition and Integration, Using Machine Learning Techniques (conference)	Shantha Kumar H C		
		IP-201	Comparison of Various Clustering Techniques to Medical Images (conference)	Divya D J, Dr. Prakasha S		

Presentation Schedule | Day – 1 | Theme: Data Engineering (Track 4)				**Venue: Hall – 6, Third Floor, ACA BLK - IV**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chair**	**Coordinators**
19th Dec 2019	Session – 2:- 03:30 pm – 5:00 pm	DE-505	Crop Recommendation using Machine Learning Techniques	S Mamatha Jajur, Soumya.N G, Dr. G T Raju	**Dr. Radhika K R** Prof., Dept of ISE, BMSCE, Bengaluru + **Dr. Bavani Shankar,** Prof., Dept of CSE, RNSIT, Bengaluru	Prof. Vidya + Prof. Sreedevi
		DE-119	An Investigation on Distributed File System: Writing Review	Shwetha K S		
		DE-144	Knowledge Discovery from Web Data for Web Personalization	Sowbhagya M P, Ganavi K R, Yogish H K		
		DE-157	A Computational Intelligence Paradigm with Human Computer Interface Learning	Kiran J Waghmare, Dr Reeja S R		
		DE-510	Location Based Web Object Search using Probabilistic Classification Model.	Anjan Kumar K N, Chandrashekar B S		
		DE-182	Early detection of Diabetic Retinopathy through Machine Learning Techniques	Manjula L, G T Raju		
		DE-183	Stock Price Prediction	N P Samarth, Gowtham V Bhat, Mrs. Hema N		
		DE-105	Information Retrieval through Query Clustering and Query Classification – A Review	Sridevi K N ,Prakasha S		

Presentation Schedule | Day – 2 | Theme: Data Engineering (Track 5)				**Venue: Hall – 1, Ground Floor, ACA BLK - IV**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chair**	**Coordinators**
20th Dec 2019	Session – 3:- 09:00 am – 10:30 am	DE-114	Intrinsic and Extrinsic Factors Predicting the Cumulative Outcome of IVF / ICSI Treatment	Gowramma G S, Dr. Shantharam Nayak, Dr. Nagaraj Cholli	**Dr. Purohit S** Prof., Dept of CSE, SIT, Tumkur + **Dr. Prakasha S** Prof., Dept of ISE, RNSIT, Bengaluru	Prof. Mamata Jajur + Prof. Anusha
		DE-112	Data Aggregation and Its Impact on Performance Enhancement	Lakshmi Bhaskar, Dr. Yamuna Devi C R		
		DE-197	Process Scheduling Using Machine Learning Approach	Chethana H R		
		DE-125	Techniques for Extracting Region of Interest in Breast Cancer	Veena M, Rashmi A R		
		DE-127	Implementation of Arithmetic unit for RNS using 2^n-3 as Base	Nagaraj Aiholli, Uday Wali , Rashmi Rachh		
		DE-110	Machine Learning Approaches for Keyword Extraction and Indexing	K S Sampada, N P Kavya		
		DE-129	Study on Tools Used in IoT Development Life Cycle	Shilpa V, Vidya A, S N Chandrashekara		
		DE-504	Web Objects Review through Sentiment Analysis	Shrinivas Biradar, G T Raju		

Presentation Schedule | Day – 2 | Theme: Data Engineering (Track 6)				**Venue: Hall – 2, Ground Floor, ACA BLK - IV**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chair**	**Coordinators**
20th Dec 2019	Session– 3:- 09:00 – 10:30	DE-124	Analysis of Diabetes Mellitus for Early Prediction and Automatic Detection of Exudates for Diabetic Retinopathy	Lubna Taranum M P, Rajashekar J S	**Dr. Satish Kumar T** Prof., Dept of CSE, BMSIT, Bengaluru + **Dr. Sumathi** Prof & HOD, Dept of EEE, RNSIT, Bengaluru	Prof. Manjula + Prof. Kavya Shree
		DE-107	A Systematic Analysis of Review on Microarray Segmentation Algorithms	Karthik S A, Dr. Manjunath S S, Shrinivasa G, Sneha C R		
		DE-133	Integration of Healthcare Ontologies at Schema Level using Customized Metadata	Monika P, Dr. G T Raju		
		DE-135	Energy-efficient and High-throughput Implementations of Lightweight Block Cipher	Pulkit Singh, Piyush Modi, Bibhudendra Acharya, Rahul Kumar Chaurasiya		
		DE-136	Performance Analysis of Internet of Things using Visible Light Communication	B R Vatsala, Dr. C Vidya Raj		
		DE-137	Preprocessing Methods for Unstructured Healthcare Text Data	Naresh Patel K M, Dr. Kiran P		
		DE-138	Data Mining Techniques for Identification and Classification of Various Diseases in Plants	Arun kumar Nakatha, Dr. Sathish S Kumar		
		DE-139	Implementation of UIDAI Aadhar Enrollment System with P2P Blockchain Technologies	Pragati Mynampati, Ms. Medha Gourayya, Dr Shashidhara H R		

Presentation Schedule | Day – 2 | Theme: Data Engineering (Track 7)				**Venue: Hall – 3, Ground Floor, ACA BLK - IV**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chair**	**Coordinators**
20th Dec 2019	Session – 3 :- 09.00 am – 10.30 am	DE-123	Recommender System for Geo-Social Access Control Framework	Priyanka C Hiremath and Dr. G T Raju	**Dr. Mohan H S** Prof. & HOD, Dept of ISE, SJBIT, Bengaluru + **Prof. Hemanth S**, Dept of CSE, RNSIT, Bengaluru	Prof. Sowmya (CSE) + Prof. Sowmya S K (ISE)
		DE-149	Ameliorated Methodology for Base Design in Information System	Kamalamma. K V, Dr. Ajeet A Chikkamannur		
		DE-150	IPOG Modified Design Technique for Effective Testing	Mrs. Shwetha M S and Dr. Girijamma H A		
		DE-151	Integration of Healthcare Domain Ontologies using Bayesian Networks	Monika P, G T Raju		
		DE-152	Hybrid Models for Adaptive Allocation of Electricity for Households	Midhush Manohar T K., Naveen Suresh, Srikumar Subramanian, Gowri Srinivasa		
		DE-153	Recent Advancement of Auto-Scaling in LTE M2M Communication.	Sunita T N, Bharathi Malakreddy A		
		IP-220	Automatic Number Plate Detection (conference)	K.Hemanth Raju, Manish Prasad, Arup Abhishek		
		NW-326	Formal Verification of Forward-Secure Authenticated Key Exchange Scheme for Location-Based Service Application	Mahesh Kumar K M, Pradeep R and Sunitha N R		

Presentation Schedule | Day – 2 | Theme: Data Engineering (Track 8)				**Venue: Hall – 4, Ground Floor, ACA BLK - IV**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chair**	**Coordinators**
20th Dec 2019	Session – 3 :- 09.00 – 10.30 am	DE-194	Study on effectiveness of treatment of Autism Spectrum Disorder using Virtual Reality	Chethan J,Santhosh Kumar, Dr. M V Sudhamani	**Dr. Yogesh H K** Prof & HOD, MCA, MSRIT, Bangalore + **Dr. Kavya N P** Prof., Dept of CSE, RNSIT, Bengaluru	Prof. Sanjay + Prof. Chandan Rani
		DE-160	Conceptual Framework for Invariant Protein Fragment Library	Sapna V M, Roshan Makam, Keshava M, Sudhanva Narayna		
		DE-161	Predicting the Popularity of Upcoming Products on E-Commerce Platforms	Gulab Sah, Rajat Subhra Goswami, Sunit Kumar Nandi		
		DE-164	Cloud Security: Inter-Host Docker Container Communication using Vault Dynamic Secrets	Mr. Ramesh K V, Dr. G T Raju		
		DE-166	A Machine Learning-based Approach for Predicting Unknown Pharmacointeractions	Jayshree Ghorpade-Aher, Shreyans Magdum, Nandini Sonkusakle, Parul Jaiswal, Raj Shah		
		DE-167	Diagnosis of Brain Diseases using Neural Networks	Anagha Naga Krishna, Tejashwini V, Dr. Sudhamani M J		
		DE-200	Analysis on detection of Rumors on online social network	Mrs Akshata S. Bhayyar, Dr. Kiran. P		
		IP-224	Novel CADe/CADx system for lung nodules segmentation and classification on Computed Tomography Images	Vijayalaxmi Mekali, Dr. Girijamma H A		

Presentation Schedule | Day – 2 | Theme: Data Engineering (Track 9)				**Venue: Hall – 5, Third Floor, ACA BLK - IV**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chair**	**Coordinators**
20th Dec 2019	Session – 3:- 9.00 am –10.30 am	DE-172	A Design on Bank Customer Complaints Analysis Using Natural Language Processing	Lakshmi K N, Divya G, Devika S P, Yogesh H S, Megha V	**Dr. Jayanna H S** Prof. & HOD, Dept of ISE, SIT, Tumkur + **Dr. Andhe Pallavi** Prof. & HOD, Dept of EIE, RNSIT, Bengaluru	Prof. Hema + Prof. Geetanjali
		DE-173	Quasi Attribute Utility Enhancement (QAUE) A Hybrid approach for PPDP	A N Ramya Shree, P Kiran		
		DE-175	Topic Modelling	Shanthala Nagaraja, Dr. Kiran Yarehalli Chandrappa		
		DE-111	An Ameliorated Approach for Fraud Detection using Complex Generative Model: Variational Autoencoder	Ms. Kaithekuzhical Leena Kurien, Dr. Ajeet Chikkamannur		
		DE-177	Model Based Testing Process for Software Systems	G Swathi, Girijamma H A		
		DE-179	Mood Mechanic	Srishti C Rai, Sheetal Vernekar, Ajay L Gowda, Nishith A, Prathima Anand		
		CS-406	MIMO Reconfigurable Antennas for Wi-Fi 2.4 GHz communication.	Sandeepkumar Kulkarni Dr. Raju Yanamshetti		
		NW-301	Efficient lookup solutions for Named Data Networks: An Analysis	Swetha B, Dr. S V Uma		

Presentation Schedule | Day – 2 | Theme: Data Engineering (Track 10)				**Venue: Hall – 6, Third Floor, ACA BLK - IV**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chair**	**Coordinators**
20th Dec 2019	Session – 3:- 9.00 am –10.30 am	DE-181	A Computational Modeling for Knowledge Binding of the Unstructured Web Data	Patil N S, Dr Kiran P , Preethi B	**Dr. Hanumanthappa. M** Prof., Dept of CS & Applications, Bengaluru University + **Dr. Anjan Kumar** Prof., Dept of CSE, RNSIT, Bengaluru	Prof. Ramyashree + Prof. Swathi
		DE-185	Creation and Instigation of Triphone based Big-Lexicon Speaker-Independent Continuous Speech Recognition Framework for Kannada Language	Praveen Kumar P S, Dr H S Jayanna		
		DE-186	Virtual Fences	Kavyashree B S, Navarathna M, Samyak V Jain, Vignesh N, Prof. Vidyashree K P		
		DE-187	Ensemble Learning Models for Churn Prediction	Debjyoti Das Adhikary, Deepak Gupta		
		DE-188	Classification of Student's Confusion Level in e-learning using Machine Learning	Bikram Kumar, Deepak Gupta, Rajat Subhra Goswami		
		IP-227	Object Based Image Retrieval with Segmentation and Extraction of Features using various methods	Laxmidevi Noolvi, Dr. M.V. Sudhamani		
		IP-208	Performance Metrics to Study the Precision of Segmentation Algorithms in Brain MRI For Early Detection of Autism	Nagashree N, Dr. Premjyoti Patil, Dr. Shantakumar Patil, Mr. Mallikarjun Kokatanur		
		DE-509	Diabetic Foot Risk Classification Using Decision Tree and Bio-Inspired Evolutionary Algorithms	B G Sudha, V Umadevi, Joshi Manisha Shivaram, Mohamed Yacin Sikkandar, Belehalli Pavan, Abdullah Al Amoudi		

Presentation Schedule | Day – 2 | Theme: DE/CS/IP				Venue: Hi-Tech Lab, First floor, ACA BLK - II		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chair**	**Coordinators**
20th Dec 2019	Session – :- 09:00am – 10:30am	NW-317	Modelling and Simulation of Tri-layered (s-Si/s-SiGe/s-Si) Channel Double Gate NanoFET	Kuleen Kumar, Rudra Sankar Dhar	**Dr. Srekantaiah** Prof., Dept of CSE, SJBIT, Bengaluru + **Dr. Bhagavath Singh,** Prof., Dept of ISE, RNSIT, Bengaluru	Prof. Vinuta + Prof. Medha
		DE-155	Virtual Assistant App for Disabled People	Madhu H S, Nithin Gowda N S, Srivatsa , Yashas Gowda H M, Ramesh B		
		DE-169	Text Mining in Healthcare	Mrs. Pranita Mahajan, Dr. Dipti P Rana		
		IP-235	Empirical Assessment of Transfer Learning Techniques for Surgical Tools Classification	Shweta Bali, Shyam Sunder Tyagi		
		DE-115	Development of Agriculture Chatbot using Machine Learning Techniques	Prashant Y Niranjan, Vijay S Rajpurohit, Rasika Malgi		
		DE-158	Machine Learning Based Twitter Sentimental Analysis in Business Field	Rohit Ningappai Padti, Shashank H G, Syed Azam H S, Vignesh Pai, Ramesh B		
		DE-142	Deduplication in Cloud Storage	Pronika, S S Tyagi, Manav Rachna		

Presentation Schedule | Day – 2 | Theme: DE/CS/IP				**Venue: Seminar Hall, Second Floor, ACA BLK-II**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chair**	**Coordinators**
20th Dec 2019	Session – :- 09:00am – 10:30am	NW-312	Designing optimal path for wireless sensor networks by combining energy and security components.	Prof. Girish Deshpande, Dr.V S Rajpurohit, Dr.S S.Sannakki, Prof.Sudhindra K Madi	**Dr. Jagadeesh Prabhudev**, Prof., Dept of CSE, JSSATE, Bangalore. + **Dr. Sathish Kumar S**, Prof., Dept of ISE, RNSIT, Banglaore	Prof. Sreenivas Biradar + Prof. Chetan J
		NW-303	Contemporary GPS Security Mechanism	Rejo Mathew		
		NW-307	Tri-objective NSGA-II Based approach for Load Balancing	Siddhartha Dwivedi, Divya Kumar		
		DE-163	Machine Learning Based Approach for Assessment of Crop Yield	karthikumesh		
		DE-165	Amazon web service meets cloud computing	Nithya Vm, P Vaishnavi, Navya N, Shreya Mokhasi		
		CS-403	Third Eye for the Blind for IOT Application	Mrs. Sudha V Salake, Dr. Shiva Prakash		
		CS-416	Patient Monitoring System for Easy Supervision using LabVIEW.	Prajwal M J, Prajwal M		

Presentation Schedule | Day – 2 | Theme: Data Engineering (Track 11)				**Venue: Hall – 1, Ground Floor, ACA BLK - IV**		
Date	**Sessions/ Timings/ Paper ID**		**Paper Title**	**Author(s)**	**Session Chair**	**Coordinators**
20th Dec 2019	Session – 4:- 12.00 pm – 01.15 pm	DE-508	Clustering Based Categorical Data Protection	Sowmya S R, Dr. Manjunath S S	**Dr. Vinutha D C** Prof., Dept of CSE, VVCE, Mysore + **Dr. Sharada Prasad** Prof., Dept of EEE, RNSIT , Bengaluru	Prof. Kusuma R + Prof. Vanishree
		DE-171	Modeling a Gene Structure Behavior Analysis based on the Correlation Ontology	Sudha V, Girijamma H A		
		DE-514	Natural Language SQL Query Processing using Fuzzy Matching and Elimination Technique	Praveena Mydolalu Veerappa, Dr. Ajeet Annarao Chikkamannur		
		DE-515	Classification methods, Deep Learning Architecture, Data source and Challenges in Detection of Breast Cancer	Nalini Sampath, N K Srinath		
		DE-516	MRCS: Map Reduce based Algorithm for Identifying Important Features from Economic Big Data using Chi-Square Test	Chandrashekar D K, Srikantaiah K C, Venugopal K R		
		IP-229	A Comparison of the Performance of Median Filter and its Variants for the Preprocessing of Mammilla Cancer Imagery	Madhukar B N, Bharathi S H., G T Raju, Chetan T Madiwalar, Sachin Munji		
		CS-411	E-WYRE: Re-Engineering Higher Education	Sahana D, Prajwal M		
		IP-204	Object Based Image Retrieval from a Repository	Laxmidevi Noolvi, Dr. M. V. Sudhamani		