



**3<sup>rd</sup> National Conference on**  
**“Recent Trends in Computer Science and Information Technology”**  
**[RTCSIT-2021]**

**Date : 11-06-2021 (Friday)**

Jointly organized by Departments of

**Computer Science & Engineering**  
and  
**Information Science & Engineering**

**SOUVENIR**

Information Drafted & Compiled by  
**Dr. Shantharam Nayak**  
**Prof. Geetha C Megharaj**

Host:

**Department of Computer Science & Engineering**

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**Sri Krishna Institute of Technology**

**Chimney Hills, Chikkabanavara Post, BENGALURU – 560090.**

NAAC Accredited Institution, Approved by AICTE, Affiliated to VTU, Belagavi, India

[www.skit.org.in](http://www.skit.org.in); [cseskitnc@gmail.com](mailto:cseskitnc@gmail.com);



**3<sup>rd</sup> National Conference on  
“Recent Trends in Computer Science and Information Technology”  
[RTCSIT-2021]**

**Date : 11-06-2021 (Friday)**

Jointly organized by Departments of

**Computer Science & Engineering [CSE]  
and  
Information Science & Engineering [ISE]**

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[www.skit.org.in](http://www.skit.org.in); [cseskitnc@gmail.com](mailto:cseskitnc@gmail.com);

## **PREFACE**

The 3<sup>rd</sup> National Conference on “**Recent Trends in Computer Science and Information Technology**” (RTCSIT-2021) is organized by the Departments of Computer Science & Engineering and Information Science Engineering of Sri Krishna Institute of Technology, Bengaluru - 560090. This is the 3<sup>rd</sup> edition of conference. The sole objective of this conference is to share a common platform for Research Scholars, Academicians, Practicing Engineers, and Industry Experts, PG Students and UG students to share their ideas, thoughts, findings, etc. The discussion platform facilitates to ignite the young engineering minds to drive them towards the progress of Computer Science & Engineering.

The theme gives scope for us to discuss the topic related to Cloud Computing, Image Processing, Computer Networks, Semantic Web, Artificial Intelligence, IoT, Mobile Computing, Machine Learning, Computer Graphics, Data Science, Big Data, Network Security, Grid Computing, Sensor Networks, Block Chain Technology, Neural Network. All these are related topics of areas in Computer Science, Information Science & Engineering field. All the papers published in the proceedings have been reviewed.

Authors are advised for not to violate copyright. They are solely responsible for any violation of Copyright. The Editors acknowledge the cooperation & support received from all the contributory authors. This conference has been successful in attracting participants from various Institutions.

We thank all the organizing committee members of the departments *COMPUTER SCIENCE & ENGINEERING* and *INFORMATION SCIENCE & ENGINEERING* and all the staff of Sri Krishna Institute of Technology for their cooperation & support in making this conference successful in a remarkable way.

We are extremely indebted and place our gratitude to the management, faculty & students of Sri Krishna Institute of Technology whose constant support has encouraged us at every phase of this conference.

**-Organizers and Editors**

**Note:** The Organizers reserve all the rights  
Authors are solely responsible for any Copy Right Violation.

## About SKIT-Bangalore

Sri Raghavendra Educational Institutions Society® [SREIS] founded in the year 1997 by a great visionary Dr. K. M. Venkataramana. The society has been in the service to the nation in the field of Health and Education. *Sri Krishna Institute of Technology [SKIT]* is one of the feathers of SREIS added in the year 2001. The society is a house hold name in the field of Para Medical education, Raghavendra Hospital, Diagnostic and Research center, College and School of Nursing, College of Pharmacy and College of Education, KMV Red Hills School, Sri Krishna Polytechnic.

SKIT is situated in the picturesque location of Chimney Hills, Chikkabanavara on Hesaraghatta road has a serene atmosphere, congenial for the pursuit of studies situated on top of a hillock overlooking vast verdant green land and watersheds enthral the visitors by its captivating beauty.

The institute has marked a niche in the field of Technical Education with the state of the art teaching equipment, innovative teaching methods, good infrastructure, highly qualified and experienced teaching faculty committed to imparting Quality Education.

SKIT offers following Under Graduate B.E courses affiliated to VTU-Belagavi.

- ❖ *Civil Engineering*
- ❖ *Computer Science & Engineering [CSE]*
- ❖ *Electronics & Communication Engineering*
- ❖ *Information Science & Engineering [ISE]*
- ❖ *Mechanical Engineering*
- ❖ *Artificial Intelligence and Machine Learning Engineering*

The Institution [SKIT] has well established identity with good academic practices sustained since the inception with the guidelines of VTU / AICTE from time to time. *Our Institution has been recently Accredited (Feb 2021) by National Assessment & Accreditation Council [NAAC] with “B” Grade. We are proud that our good practices continue to remain and improve for further excellence.*

*The Departments of CSE & ISE are performing very well all these years and they regularly organize useful events in the department for the benefit of students, faculty.*



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# MESSAGES FROM DIGNITARIES

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Website: www.nbaind.org

**Message**

*I am pleased to know that Sri Krishna Institute of Technology [SKIT], Bengaluru is an Accredited Institution affiliated to Visvesvaraya Technological University [VTU], Belagavi. It is learnt that the Institution is giving adequate attention on good academic credentials since its inception in 2001.*

*I am glad to know that the Departments of Computer Science Engineering and Information Science Engineering of SKIT-Bangalore are organizing their 3<sup>rd</sup> National Conference on "Recent Trends in Computer Science and Information Technology [RTCSIT-2021]" on 11<sup>th</sup> June 2021.*

*The fast development in the field of computers makes it essential to regularly update on the latest technology. The conference of this kind provides a platform for discussion on current & futuristic developments which leads to relevant research. I whole-heartedly congratulate Management, Principal and the Organizers for facilitating and conducting this conference in a befitting manner.*

*I wish the conference a grand success with rich technical deliberations which may open another door for Excellence in Computer Science and its applications.*

A handwritten signature in blue ink, appearing to read 'K. K. Aggarwal', with a horizontal line extending to the right.

(Prof K K Aggarwal)

Chairman, NBA

Past President, CSI

**MESSAGE FROM FOUNDER SECRETARY**

*I am delighted that the Department of Computer Science Engineering and Information Science Engineering of our Institution are organizing a 3<sup>rd</sup> National Conference on 'Recent Trends in Computer Science and Information Technology' (RTCSIT-2021) on 11<sup>th</sup> June 2021.*

Conferences are a major source of cutting edge research, particularly in science and engineering. I hope the relevant topics in the present conference will be of great importance and of International relevance. I am also happy to know that the papers presented in this conference are being published in the Proceedings / Souvenir.

*I congratulate the organizers and the participants for their hard work and the creative minds behind this event. I wish the conference all the success.*

**Dr. K. M. Venkataramana**  
Founder Secretary, SREIS

\*\*\*\*\*

**MESSAGE FROM PRESIDENT**

*I am glad to know that the Department of Computer Science Engineering and Information Science Engineering of our Institution are organizing a National Conference on 'Recent Trends in Computer Science and Information Technology' (RTCSIT-2021) on 11<sup>th</sup> JUNE 2021.*

*In this era of rapid development in the field of engineering, it is essential for everyone that the latest technology and trends be known to everyone. I am extremely happy to know that the departments are also going to present the collection of various technical papers in the context of the present conference.*

*I wish, the professionals will come up with new exciting ideas and initiatives. I also congratulate all the Participants, Principal, HODs, Staff of Computer Science and Information Science Department. Wish the conference all the success.*

**Smt. Sumitra Venkataramana**  
President, SREIS



**MESSAGE FROM DIRECTOR**

*It is indeed delightful to observe that 3<sup>rd</sup> National Conference on 'Recent Trends in Computer Science and Information Technology' (RTCSIT-2021) being organized by the Department of Computer Science Engineering and Information Science Engineering of our Institution on 11<sup>th</sup> June 2021.*

*The National conference will bring together academicians, research scholars, practicing engineers, and industry experts to share their valuable perspectives and best practices for the present and future developments in the field of Computer Science Engineering. I expect the conference to throw more light on the relevant topics, help everyone to stay in touch with the recent developments and move ahead of the curve.*

*I congratulate the organizers, participants in view of the conference and wish an enjoyable and knowledge gaining experience.*

**Dr. V. Raghavendra**  
Director, SREIS

\*\*\*\*\*

**MESSAGE FROM PRINCIPAL**

*I am immensely happy that the Department of Computer Science Engineering and Information Science Engineering of our esteemed Institution are jointly organizing 3<sup>rd</sup> National Conference on "Recent Trends in Computer Science and Information Technology" [RTCSIT-2021] on 11<sup>th</sup> JUNE 2021.*

*The conference will provide a platform for the academicians, research scholars, and industry experts to interact among themselves and enlighten about the latest developments in the field of computer science.*

*I congratulate HODs, staff members, and students of Computer Science and Information Science Departments, and all the Participants for their efforts in organizing and participating in this conference. I wish this conference all the success.*

**Dr. A. Manjunatha**  
Principal, SKIT.

## **CONFERENCE COMMITTEES**

### **CHIEF PATRONS**

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Prof. Geetha Megharaj, *Associate Professor, CSE Dept, SKIT, B'lore.*

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*Prof. Veena Maruti Naik, Asst. Professor. ISE Dept, SKIT, B'lore*

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Prof. Sandhya B R, *Asst. Professor. CSE Dept, SKIT, B'lore*  
Prof. Veena Maruti Naik, *Asst. Professor. ISE Dept, SKIT, B'lore*

**Appreciate this Teamwork**

## **ABOUT CONFERENCE**

The Departments of Computer Science & Engineering and Information Science Engineering of Sri Krishna Institute of Technology, Bengaluru – 560090, jointly planned to organize 3<sup>rd</sup> National Conference on “**Recent Trends in Computer Science and Information Technology**” [RTCSIT-2021] during 11<sup>th</sup> June 2021. The objective of this conference is to share a common platform among Research Scholars, Academicians, Practicing Engineers, and Industry Experts, PG Students and UG students to share their ideas, thoughts, findings, etc.

*Most of the proceedings happen in ONLINE mode due to COVID-19 Pandemic situation.*

The expert speakers are invited to participate in the deliberation. The Chief Guest deliver the Inaugural Address and keynote speaker deliver the Keynote address during the Inauguration. These talks throw light on latest domain in computer Science field. The Invited speakers discuss the latest topic & technology which is very much useful for the graduates in CSE & ISE & IT related branches.

The main attraction of the conference is Paper presentation from authors representing host institution, other institutions from the state of Karnataka and out side state. We have received good response for paper submission from the potential participants. The papers submitted have been properly scrutinized by selection panel and possible recommendations were indicated for presentation. Based on the set of papers they have been broadly categorized into 3 Tracks.

<b><i>Track</i></b>	<b><i>Category</i></b>
1	<i>Mobile, Networks, Security &amp; IoT</i>
2	<i>AI, ML, Bigdata, Cloud Computing</i>
3	<i>All other CS Field like Data science, Block chain, NN, Grid etc.,</i>

All the Registered authors are allowed to present their papers as per schedule. The organizers plan to consider to publish all relevant papers presented during the conference in a Google Indexed International Journal.



Sri Raghavendra Educational Institutions Society ®

## Sri Krishna Institute of Technology

No. 29, Chimney Hills, Hesaraghatta Road, Chikkabanavara Post

**BENGALURU – 560090.** Web : [www.skit.org.in](http://www.skit.org.in)

NAAC Accredited Institution, Approved by AICTE, Affiliated to VTU-Belagavi, India



**Host: Department of Computer Science & Engineering**

### INVITATION

Solicit your gracious presence for the inauguration of

**3<sup>rd</sup> National Conference On  
"Recent Trends in Computer Science & Information Technology"  
[RTCSIT-2021]**

On Friday, the **11<sup>th</sup> June 2021** at 9.20 am in college auditorium

**Chief Guest**

**Prof. K K Aggarwal**

Chairman-NBA, New Delhi & Past President CSI

will deliver the Inaugural Address (in Virtual mode)

**Guests of Honor**

**Mr. Manoj Kashyap R**

Corporate Trainer, Classfly, Bengaluru

**Dr. V. Raghavendra**

Director, SREIS, Bengaluru

**Dr. Manjunatha A**

Principal SKIT, Bengaluru

will preside over the function

**Prof. Geetha C Megharaj**

Event Convener

**Dr. Hemalatha K L**

HoD-ISE

**Dr. Shantharam Nayak**

HoD-Host Department

**Venue: College Auditorium**

Jointly Organized by : Departments of

Computer Science & Engineering and Information Science & Engineering

## INAUGURAL ADDRESS



**Prof. K K Aggarwal**

Chairman NBA, New Delhi

Past President-CSI, Founder VC GGSIPU, Delhi.

*A MAN WITH GREAT DEDICATION & PERFECTION*

### Brief Profile

**Prof. K K Aggarwal**, obtained his Bachelor of Engineering Degree from Punjab University and Masters Degree from NIT, Kurukshetra. Later, he did his Ph.D also from NIT, Kurukshetra. After a distinguished service of 27 years at NIT, Kurukshetra, Prof. Aggarwal served as Pro Vice-Chancellor, GJU, Hisar for a period of three years, and then as Founder Vice Chancellor of GGS Indraprastha University, Delhi for a period of 10 years. He has been President of the Institution of Electronics and Telecommunication Engineers (IETE) for the period 2002-2004, President, Computer Society of India from 2007-2009 and President of South East Asia Regional Computer Confederation (SEARCC) from 2008-10. Prof. Aggarwal has published approximately 400 papers in the reputed Journals – about 50% of these in international journals. He has been widely consulted by the industry, most-notable being his contribution towards the Reliability Analysis for PSLV (Polar Satellite Launch Vehicle). Prof. Aggarwal was conferred the Honorary Fellowship by Broadcast Society of India. He was decorated with Life Time Achievement Award by IETE and also by Computer Society of India. Prof. Aggarwal has been associated with NBA in various capacities since its inception and was Chairman, EEAC ( Tier-II ) before taking over as Chairman, NBA on 14<sup>th</sup> January, 2019.

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### “India’s National Educational Policy [NEP] : Boundless Opportunities”

As predicted in our 2014 Understanding India report there are more than 37.3 million students at India’s 993 universities and 39,931 colleges. These students are being taught by 1.4 million academics and researchers with a gross enrolment ratio of 26.3 per cent. The challenges underlying these impressive numbers are, however, to do with less focussed learning outcomes at the school level. Issues that combine to contribute to a culture of rote learning include:

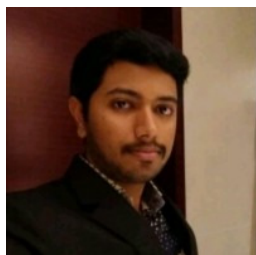
- Outdated curricula and Assessment Systems.
- Lack of quality in pre- and in-service teacher education.
- Uneven adoption of appropriate Education Technology.

To address these challenges in their totality, the Indian Government approved the National Education Policy (NEP) in 2020. The policy was developed as a result of two years of wide-ranging consultations and launched by India’s Honorable Prime Minister Sri Narendra Modi on **7<sup>th</sup> August 2020**.

**The NEP is a significant step towards India’s journey to become a Global Knowledge Economy.**

The NEP lays out progressive reforms across the entire education ecosystem, including reforms in assessment systems, continuous professional development of teachers, and quality assurance mechanisms in Higher Education Institutes (HEIs). This is done with a view to providing **high quality education with better learning outcomes, enhanced research quality and improved employability of graduates**. *All Educational Institutions (including Higher Education) must grow to the expected level with a focus on High Quality Education as desired to fruitful result of NEP-2020 in the years to come.*

## KEYNOTE ADDRESS



**Mr. Manoj Kashyap R**

Founder at EthicalByte Pentester | Security Analyst | Code auditor | Bug Bounty Hunter | Red team Analyst | IoT Specialist, Classfly, Bangalore ( manoj.manina@gmail.com)

### Brief Profile

Manoj Kashyap is a Technical Training Director, Technical Corporate Trainer | Cyber security Analyst | IoT Specialist | Code Auditor | Pentest | Computer Forensic | BUG BOUNTY FINDER.

Manoj has been Awarded as best Instructor (USA Based Company). Presented seminars about Ethical hacking and Cyber security, in Colombo Srilanka. Founder of EthicalByte Trained Above 6500 Students and corporate Employees. UDrone (Umbrella Drone was awarded in IEEE Conference).

Worked on a project in the field of speech technology to auto finish an unfinished musical piece. Used techniques like Otsu's method and a Multi -Layer Perceptron, to achieve an accuracy of 98.5% in detecting legible Handwritten Numerical Digits Certifications: EC-Council (Ethical hacking Expert), • CompTIA N + • CompTIA Security + • CISCO CCNA, • SYBGEN Python, Corporate trainer, Code Auditor, Ethical Hacker.

**MANOJ KASHYAP R.** Graduate of B.E (Electronics and Communication). 6 years of experience in IT industry and association with corporate companies.

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### “Deep Learning - Way Forward”

Deep Learning In recent years, deep learning has achieved great success in many fields, such as computer vision and natural language processing. Compared to traditional machine learning methods, deep learning has a strong learning ability and can make better use of datasets for feature extraction. Because of its practicability, deep learning becomes more and more popular for many researchers to do research works. In this paper, we mainly introduce some advanced neural networks of deep learning and their applications. Besides, we also discuss the limitations and prospects of deep learning.

Deep learning is an emerging area of machine learning (ML) research. It comprises multiple hidden layers of artificial neural networks. The deep learning methodology applies nonlinear transformations and model abstractions of high level in large databases. The recent advancements in deep learning architectures within numerous fields have already provided significant contributions in artificial intelligence the superior and beneficial of the deep learning methodology and its hierarchy in layers and nonlinear operations are presented and compared with the more conventional algorithms in the common applications. The state-of-the-art survey further provides a general overview on the novel concept and the ever-increasing advantages and popularity of deep learning.

## INVITED TALK



**Dr. Mohammed Misbahuddin**

Joint Director at Centre for Development of Advanced Computing (C-DAC), Bangalore (misbah@cdac.in)

### Brief Profile

Dr. Mohammed Misbahuddin did his B.Tech. (CSE) from Gulbarga University, M.Tech. (S/w Engg.) from JNTU-Anantapur and PhD (CSE) in Cyber Security from JNTU Hyderabad. He is working as Joint Director at Centre for Development of Advanced Computing (C-DAC), E-City, Bangalore, where he Heads the Information Technology Systems and Services (ITSS) Division at C-DAC Electronics City. He is the Chief Investigator of Information Security Education and Awareness (ISEA) project at C-DAC Bangalore. He is the Co-Investigator of Next Generation PKI for Smart Applications Project. He is the Coordinator for ACTS courses. He is the Chair of Working Group on IEEE Standard for Authentication in Multi-Server Environment. His Patent on “Authentication in Multi-Server Environment” is granted by Indian Patent Office (IPO), his 2 more patent applications are in evaluation stage with IPO. He has 40+ Research publications published in International Journals and Conferences. He has 18+ years of experience in Research, Training and Project Development. He is the Initiator and Co-Investigator of National e-Authentication Project called “e-Pramaan”. He was instrumental in drafting the e-Authentication Standards for MeitY, Govt. of India. Under his supervision, 2 scholars were awarded PhD and 4 Scholars are currently pursuing PhD from different Universities. He has been a guest speaker at various International and National conferences / workshops and has delivered more than 120 talks across 32 States & UTs in India. His areas of interest include Information Security, Strong Authentication, PKI, Risk based Engines, Zero Trust Architectures, DNA Cryptography, DNS Security, Identity of Things.

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### “Cyber Hygiene - Practices to Achieve Cyber Safety”

In this digital era, people of all ages use the Internet for multi-various purposes including socializing, and the access to Internet has gradually become easier, faster and personalized through the use of mobile phones. Governments have also started to offer their services through the Internet for the convenience of citizens. However, one need to be aware of the dark spots on the cyber space and tread carefully, as crimes keep increasing and malware are getting stealthier and increasingly becoming difficult to detect, analyse and mitigate. Cyber Hygiene is the best way to protect oneself from cyber-crimes and at the same time to participate safely in Internet. Keeping in view the pervasive nature and impact of cyber security on all walks of life - economic and social, it is imperative to focus on certain areas such as Identity, Passwords, Mobile Security, Social Engg. to name a few. The technical talk on Cyber Hygiene will cover these areas and create awareness about these key areas to demonstrate the importance of our identities, secret credentials, mobiles etc.



## INVITED TALK



**Mr. Manish Kulkarni**

Data Scientist, Quacquarelli Symonds, Bangalore. (manishkulkarni08@gmail.com)

### Brief Profile

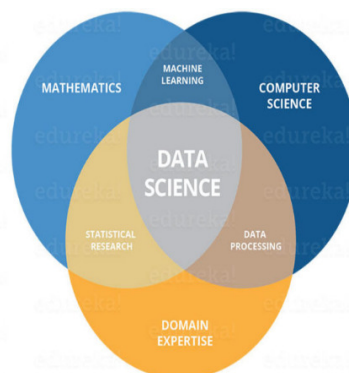
Manish Kulkarni completed his BE in Computer Science from SDMCET, Dharwad and M.Tech in Software Engineering from RVCE and Post Graduation Diploma in Data Science from IIITB, Bangalore. He won the Techno Champ competition organized by John Deere at National level in 2010 and 2011. He has gained tremendous experience through companies like Honeywell and Mindtree on Data Science, Data Analytics and Embedded Systems. Presently, he is working as Data Scientist at Quacquarelli Symonds, the world's leading provider of services, analytics, and insight to the global higher education sector.

\*\*\*\*\*

### “Data Science & Its Significance”

Data Science is the most talked topic in the technology community. Fresher or Experienced Professionals do want to enter the world of Data Science because of the over hype around it. It's also the most misunderstood one too. Data Science is the assortment of various skills that needs to be understood to make one a good Data Scientist or Data Analyst.

Data is one of the important features of every organization because it helps business leaders to make decisions based on facts, statistical numbers and trends. Due to this growing scope of data, data science came into picture which is a multidisciplinary field. It uses scientific approaches, procedure, algorithms, and framework to extract the knowledge and insight from a huge amount of data. The extracted data can be either structured or unstructured. Data science is a concept to bring together ideas, data examination, Machine Learning, and their related strategies to comprehend and dissect genuine phenomena with data. Data science is an extension of various data analysis fields such as data mining, statistics, predictive analysis and many more.



**Sri Krishna Institute of Technology, Bengaluru-560090.**  
**Host : Department of Computer Science & Engineering**  
**3<sup>rd</sup> National Conference on "Recent Trends in Computer Science and Information Technology [RTCSIT-2021]"**  
**Jointly organized by Departments of CSE & ISE**  
**Date: 11-06-2021(Friday)**  
**Conference Schedule [RTCSIT-2021]**

*Inauguration (11-06-2021, 9.20 am) Venue: College Auditorium* *Valedictory : 4.15 PM*

Date & Day	Inaugural Session 9:30 AM to 10:15 AM	Session 1 10:30 AM to 11:45 AM	Session 2 11:55 AM – 1.15 PM	Lunch Break (30 Mins)	Session 3 1:45 PM to 3:00 PM	Session 4 3:15 PM to 4.15 PM
11-06-2021 FRI	<b>Inauguration:</b> Chief Guest : Prof. K K Aggarwal, Chairman NBA, New Delhi-deliver Inaugural address [Prof. KKA]  Mr. Manoj Kashyap R, Classfly – Keynote Address [Mr. MKR]	<b>Paper Presentation</b> Track 1: I-101 to 106 Track 2: I-201 to 206 Track 3: I-301 to 306	<b>Paper Presentation</b> Track 1: I-107 to 113 Track 2: I-207 to 212 Track 3: I-312, 313, E351-352	<b>Break (15 Mins)</b>	<b>Paper Presentation</b> Track 1: E151 to 156 Track 2: E251 to 254 Track 3: I-307 to 311  <b>Invited Talk</b> "Data Science & its Significance" [Mr. MNK]	<b>Invited Talk</b> "Cyber Hygiene - Practices to Achieve Cyber Safety"  [Dr. MM]

**Resource Persons:**

1. **Prof. K K Aggarwal** [Prof. KKA]– Chairman, National Board of Accreditation-New Delhi & Past President of CSI.
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3. **Dr. Mohammed Misbahuddin** [Dr. MM], Joint Director at Centre for Development of Advanced Computing (C-DAC), Bangalore.
4. **Mr. Manish Kulkarni** [MNK], Data Scientist, Quacquarelli Symonds, Bangalore.

**For paper presentation Venue 1: CSE B 208(Track 1); Venue 2 : CSE B 205 (Track 2); Venue 3 : ISE Lab (Track 3)**

TRACK	Session 1 (Session chair)	Session 2 (Session chair)	Session 3 (Session chair)
1	Dr. Srinidhi N, SKIT-B'lore	Prof. Geetha Megharaj, SKIT-B'lore	Dr. Nagaraj G Chollai, RVCE-B'lore
2	Dr. Shrishail Math, SKIT-B'lore	Dr. Anasuya N J, DBIT-B'lore	Dr. Shambhavi B R, BMSCCE, B'lore
3	Dr. Hemalatha K L, SKIT-B'lore	Dr. Shantharam Nayak, SKIT-B'lore	Dr. Samiksha Shukla, Christ University, Pune

**Online Meet Link**

<b>Track 1:</b> <a href="https://meet.google.com/dqj-rmcj-bww">https://meet.google.com/dqj-rmcj-bww</a>	<b>Track 2:</b> <a href="https://meet.google.com/rsc-cpbq-qsh">https://meet.google.com/rsc-cpbq-qsh</a>	<b>Track 3:</b> <a href="https://meet.google.com/tps-ctop-xvs">https://meet.google.com/tps-ctop-xvs</a>
<b>Inauguration:</b> <a href="https://meet.google.com/vrh-bhth-jkp?hs=224">https://meet.google.com/vrh-bhth-jkp?hs=224</a> <b>Invited talk:</b> <a href="https://meet.google.com/xuj-nmks-bmn">https://meet.google.com/xuj-nmks-bmn</a> ; <b>Valedictory :</b> <a href="http://meet.google.com/aiy-rxot-wqd">http://meet.google.com/aiy-rxot-wqd</a>		
<b>Coordinator(s):</b> Track 1(Prof. IA); Track 2 (Prof. NR); Track 3(Prof. SBR); Inauguration / Valedictory (Prof. AM / SU/NT/SB); Invited Talk (Prof. PK)		

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**3<sup>rd</sup> National Conference on  
"Recent Trends in Computer Science & Information Technology [RTCSIT 2021]"  
Date : 11-06-2021 (Friday). Organized at SKIT, Bangalore-560090.**

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# ABSTRACTS OF SELECTED PAPERS

**Note:** The Abstracts provided by the author(s) has been published in 'As is & where is' form. The Errors / Omissions (if any) is unintentional. Authors are solely responsible for any kind of copyright violation.

**Image Segmentation and Object Recognition****I-101****Aishwarya S Kumar<sup>1</sup>, Guru Kiran B L<sup>2</sup>, M Saqlaen Ahmed<sup>3</sup>, Kiran B V<sup>4</sup>, Prof. Geetha C Megharaj<sup>5</sup>**<sup>1,2,3,4</sup> CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>5</sup> Associate Professor, CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** The work focuses on object recognition to perform a set of closely related tasks in the field of computer vision, involving object detection and identification. Image classification involves an array of tasks like identifying the class of an object in an image. An object that is identified can also be precisely localized and a bounding box is drawn around it. Object detection combines both localization and identification and classifies one or more objects in image. For Object recognition, a technique called 'Mask Region-based Convolution Neural Networks' or Mask R-CNN is used. It is an extremely efficient approach for object localization and recognition tasks. It is an extension over Faster RCNN method by adding a parallel process for the prediction of a highly accurate object segmentation mask that conforms to the bounds of each detected object in the Region of Interest (RoI) by performing pixel by pixel analysis and classification while still staying highly performant. By using the above methods, individual objects can be identified more precisely than with precise localization. It is also easy to generalize the algorithm to other tasks like estimating the pose of a human in the image or applying a color filter to the image selectively on any object.

**Keywords:** Image Segmentation, Object Recognition, Computer Vision.

**Surveillance Rover Based on Real Time Object Recognition****I-102****Ashish Daga<sup>1</sup>, Adarsh Raj<sup>2</sup>, Dipendra Sah<sup>3</sup>, Md. Kamran<sup>4</sup>, Lokesh H D<sup>5</sup>**<sup>1,2,3,4</sup> CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>5</sup> Faculty CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** In the past few years there have been plenty of technical advancements in surveillance, by the introduction of types of closed loop cameras. These have assisted in solving crime scenes and yet, the rate has not reduced due to the immovability of the surveillance equipment. In any hostage situations security cameras are the first to be targeted by the outlaws to protect their identity. therefore, the need for the development of mobile surveillance equipment is high. Residential areas, government organizations, commercial spaces, schools and hospitals, industries, banking and other challenging indoor and outdoor environments require surveillance systems. This project proposes a rover which can be controlled through the internet and can be used for surveillance applications. Raspberry Pi 3 B+ is used as the brain of the system and the module is also capable of performing Object Recognition using the YOLO.V3 algorithm which is based on deep learning. The rover can be controlled through an android application which communicates with the Raspberry Pi on the Rover and gets the job done. VNC viewer is used to have an access to the Raspbian OS of Raspberry Pi to make changes in its functioning.

**Keywords:** Surveillance. Raspberry Pi 3 B+, YOLO.V3, deep learning, Raspbian OS.



### Automatic Motorcyclist Helmet Rule Violation Detection using TensorFlow & Kera's in OpenCV

I-103

**Anish Pant<sup>1</sup>, Swagatam Mukhuty<sup>2</sup>, Ghulam Abdul Qadir<sup>3</sup>, Md. Tausif<sup>4</sup>, Shilpa V<sup>5</sup>**  
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**ABSTRACT:** Motorcycle accidents have been hastily growing throughout the years in several countries because road safety is often neglected by riders worldwide leading to accidents and deaths. To address this issue, most countries have laws which mandate the use of helmets for two-wheeler riders so, it is very important for motorcyclists to understand the risks of riding without a helmet. Riders who do not wear helmets are at greatest risk of suffering a traumatic brain injury; if they met with an accident without protection, the head is susceptible to a harrowing impact in an accident. In India, there is a rule that mandate helmet only for riders but not even for passengers. Anyone may suffer from accident or head injuries whom are using motorcycle without helmet. It should be mandatory for everyone to wear helmet; even for children. So, to mandate this we have developed a system which is based on TensorFlow & Kera's in the field of Computer Vision. System is able to detect whether motorcyclists wear helmet or not even at real time. If anyone of them is present with no helmet then system will precisely observe the situation and declare the rule violations. The system can be implemented in malls, offices, marts, school and college that only allows people to enter the premises only after detecting helmet with automated barrier. It will definitely affect the use of helmet that will save humans life at all.

**Keywords:** Motorcycle, helmet, Computer vision, TensorFlow, Kera's, barrier.

### User Reposed Based Movie Recommendation System

I-104

**Saajan Shrestha<sup>1</sup>, Prashant Verma<sup>2</sup>, Prakash<sup>3</sup>, Gaurab Sah<sup>4</sup>, Dr. Shrishail Math<sup>5</sup>**  
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**ABSTRACT :** Filtering devices are often used to extract unwanted data from vast amounts of data. Recommender systems look for and predict useful and insightful things that a user might enter into the data. Filtering systems are used to remove unnecessary information from a large amount of data. The system emphasizes reusing the information and preferences of the users that can be used in the calculation of future recommendations. This paper proposes a recommender framework that makes recommendations based on the data provided by users. It is accomplished by analysing the psychological profile of the individual, their viewing experience, and movie ratings from other websites. It is actually based on aggregate similarity conditions. This system uses both content and collaborative filtering. Both can be explained in the following way: Collaborative filtering entails creating structures based on previous user actions. (ie. Items that have been previously chosen or rated) Following that, the model is used to forecast outcomes that the consumer might be interested in.

**Keywords - Model-based, Memory-based, Content-based, Hybrid, Recommendation, Collaborative filtering**

**BRE-LEACH: An Advance LEACH Protocol to Increase Efficiency of WSN I-105****Saurav Kumar Thakur<sup>1</sup>, Ujwal Kumar<sup>2</sup>, Rohindra Nath Shah<sup>3</sup>, Rajeev Kumar Roy<sup>4</sup>, Rashmi K T<sup>5</sup>**<sup>1,2,3,4</sup> CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>5</sup> Assistant Professor CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** The Wireless Sensor Network is shorthand as (WSN) is a recent technology that is turning things into very worthwhile in the field of military and civilian applications where power is the most crucial factor currently. This paper provides a new protocol advancement of the LEACH (Low Energy Adaptive Clustering Hierarchy) algorithm named BRE-LEACH (Balanced Residual Energy-LEACH) that is centric to expand network lifetime through optimizing energy depletion, mainly depends on three factors: residual energy, distance to BS (Base Station) and multi-hop. Residual energy is the main element in the cluster head (CH) selection procedure to avoid the participation of low energy sensor nodes as a CH because it consumes more than the normal node. The BRE-LEACH sorts out the optimal path by choosing the CH which has the largest residual energy and minimum distance to BS as the root CH which aggregates data of other CHs and forwards them to the BS. The farthest CHs use the multi-hop to attain the root CH. The simulation results in MATLAB exhibit that our proposed protocol BRE-LEACH increases network lifetime by 55.73% compared with the LEACH algorithm.

**Keywords:** WSN, LEACH, CH, BS, BRE-LEACH.

**Evolution of IOT Data Management System I-106****Rajnandan Rajbanshi<sup>1</sup>, Munna Shah<sup>2</sup>, Vikash Kumar<sup>3</sup>, Ujwal Kumar Shah<sup>4</sup>, Amina. N<sup>5</sup>**<sup>1,2,3,4</sup> CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>5</sup> Asst. Professor CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** The Internet of Things (IOT) introduces a new challenge for Database Management Systems (DBMS). The large numbers of sensors are used in internet of things in daily life. A huge amount of heterogeneous data is generated by these sensors which is handled by a correct DBMS. The IOT has a difficult task for the DBMS in evaluating how to store and handle a huge amount of heterogeneous data. DBMS can be categorized into two main types: The Relational DBMS's and the Non-relational DBMS's. This paper aims to provide a thorough comparative evaluation of two popular open-source DBMS's: MySQL as a Relational DBMS and MongoDB as a Non-relational DBMS. In Cloud computing, the inserting and retrieving of large sized data is compared for performance evaluation of two types of databases.

**Keywords:** IoT, heterogeneous, open-source, Non-relational, NoSQL.

**Smart Home Automation Using Wi-Fi Technology****I-107****Vidya.M<sup>1</sup>, Thanushree H<sup>2</sup>, Ruthu G<sup>3</sup>, Pooja N.R<sup>4</sup>, Dr. Shantharam Nayak<sup>5</sup>**<sup>1,2,3,4</sup> UG Students, CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>5</sup> Professor, CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** This venture rotates around making a home computerization framework model with the principal center being the capacity to operate devices through the web. The framework comprises of focal gadget, a worker and an Android application. The need of headway for remote operation, there are few associations are presented like Global System for Mobile (GSM) correspondence, Wireless-Fidelity (Wi-Fi) and Bluetooth [1]. Everyone in association has their own remarkable determinations and applications. Among the four mainstream remote associations that regularly executed in Home Automation System (HAS) project, Wi-Fi is being picked with its appropriate capacity. The abilities of Wi-Fi are all that anyone could need to be carried out in the plan. Additionally, the greater part of the current PC/scratch pad or Smartphone accompany worked in Wi-Fi connector. It will in a roundabout way decrease the expense of this framework. This task includes the plan of home mechanization and security framework utilizing Raspberry Pi and Arduino, a credit estimated PC. Raspberry Pi gives the highlights of a smaller than normal PC, extra with its General-Purpose Input Output (GPIO) pins where different parts and gadgets can be associated. GPIO registers of Raspberry Pi are utilized for the yield purposes. This task plans a plug extension that can be handily associated with GPIO Pins of the Raspberry Pi. The home apparatuses are associated with the info/yield ports of Raspberry Pi alongside the plug extension and their status is passed to the Raspberry Pi. The android running OS in any telephone associated with an organization can get to the situation with the home machines through an application. It presents the plan and execution of mechanization framework that can screen and control home machines through android telephone or tablet.

**Keywords:** Appliances, Prototype, HAS, GPIO, Android.

**Real Time Traffic Management System Using Machine Learning****I-108****Shweta S Bagali<sup>1</sup>, Nithin T S<sup>2</sup>, Santhosh M<sup>3</sup>, Rajath K<sup>4</sup>**<sup>1</sup> Faculty, Department of CSE, Sri Krishna Institute of Technology, B'lore-560090, India<sup>2,3,4</sup> UG Students, Department of CSE, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** The congestion of vehicles on the road is increasing day by day and also the management of such large traffic by traditional approach isn't Adequate. In today's scenario, the traditional approach works efficiently only if the count is sparse, as the density of vehicles on a particular side of the road increases or if the traffic is comparatively larger on one side than the other side in such case the approach fails. Hence, we aim to redesign the traffic signal system that is static switching to signal switching, which can perform real-time signal monitoring and handling. So, in this project, the switching time of the signal will be decided based on real-time image detection with good accuracy in dense traffic. This practice can prove its most effective in releasing congested traffic at an efficient and faster rate.

**Keywords:** Traffic flow, Vehicle Count, Vehicle Detection, Vehicle Track.

### To Design & Develop A Digital Infrastructure for Remote Monitoring System For Covid-19 Disease I-109

**Harini N<sup>1</sup>, Kiran Hebbar K R<sup>2</sup>, Manasa J<sup>3</sup>, Sandeep N P<sup>4</sup>, Sindhu G<sup>5</sup>**

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**ABSTRACT:** Covid-19 has become pandemic, spreading all over the world. To evolve more testing facilities and to develop vaccine, Researchers and doctors are working day and night and to enhance monitoring systems. Mobile and web-based applications, based on questionnaires, have already been developed to monitor the health of individuals. Devices are not only sense and record, but can also monitor and respond. The paper will focus specifically on 1) wearable devices suitable for monitoring the populations at risk and those in quarantine, both for evaluating the status of health of management personnel and caregivers, and for facilitating processes for admission to hospitals; 2) unobtrusive sensing systems for detecting the disease and for monitoring patients with relatively mild symptoms and 3) the technology provided for the remote monitoring and diagnosis of COVID-19 and related diseases is telehealth technology.

**Keywords :** COVID-19, wearables, sensing, mobile health, telemedicine, physiological monitoring, IOT.

### A Survey on Alert of Accident and Hazardous Situations Using IoT Helmet I-110

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**ABSTRACT:** As of now, India is the greatest commercial center for 2-Wheeler's (China being 2d) inside the worldwide. Be that as it may, this prompts developing road mishaps and subsequently becoming the demise charge. Caps should be utilized while riding a bike. The greater part of the passing happen inside the first few moments of effect. Subsequently, in this vital period of time, in the event that casualties get the legitimate clinical assistance, death rates can be diminished. Brilliant protective caps make the excursion of riders more secure and more agreeable. The keen protective cap gives entire wellbeing measures which envelop fortuitous event discovery and SOS notice right now delayed consequence and bringing in fortuitous event clasp to the cloud, getting admonitions of nearby vehicles which can be gravitating toward from the back. Sharp cap progresses the usage of the head defender by pulling in the client by its highlights like network with a telephone, offering clasps of an excursion to loved ones, climate refreshes just as GPS. Bearings by means of voice. What's more, a customary model of the cunning head protector has been progressed for the mining business in a work to find dangerous occasions inside the mining, climate. The high level model is equipped for sense the uncommon of air, dampness, taking out the head protector through digger, vehicle rider, also, and crash of a thing on head.

**Keywords :** WI-FI, IOT, IR sensor, GSM, GPR MASTER and SLAVE, SOS

**Future Enhanced Technology with the advent uses of Internet of Things: a Review I-111****Prof. Pradeep Kumar K<sup>1</sup>, Prof. Veena M Naik<sup>2</sup>, Prof. Shruti B P<sup>3</sup>, Prof. Tejashwini N<sup>4</sup>**<sup>1</sup>Faculty CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>2,2,4</sup> - Faculty ISE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** Internet of Things (IoT) is drastically changing technology that is drawing people to on the customary method of living life. Cyber smart city, intelligent homes, contamination control, energy saving, cyber smart transportation & industries are the global changes by IoT. Tremendous research studies and experimentations have been done to upgrade the innovation through IoT. Notwithstanding, there are still a ton of hurdles and issues that need to be focused to accomplish the maximum capacity of IoT. These aspects and issues must be to see futuristic aspect of IoT in terms of applications, challenges, empowering innovations, social and natural effects and so forth. The primary objective of this survey article is to focus from both social and mechanical perspective. The article talks about different difficulties and main points of contention of IoT, engineering and important application areas. This article helps the per-users and scientist to comprehend the IoT and its relevance to this present reality.

**Keywords:** Internet of Things (IoT), Cyber smart city, brilliant homes, contamination control, energy saving, Cyber smart transportation & industries.

**Reducing Routing Misbehavior in Dynamic Source Routing Protocol Using Modified Distributed Trust Model and FG Model for Wireless Adhoc Networks I-112****Rajani K C, Dr. Aishwarya P**<sup>1</sup>Assistant Professor ISE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>2</sup>HoD CSE Department, Atria Institute of Technology, B'lore-560032, India

**ABSTRACT:** Routing is an important role in modern communication networks. In WANs malicious nodes are the abnormal nodes which lead to security and routing problems. The paper presents a distributed trust model to detect malicious nodes in WANETs. The mechanism depends on the distributed trust model on each node, which is based on the reputation value computed for that particular node by its neighboring node. The reputation information is collected, archived and interchanged between the nodes. We compare the performance of the proposed scheme in terms of two performance metrics throughput and traffic overhead under malicious attacks. By comparison of proposed model with normal distributed trust model proposed model performs better in all two categories. To minimize total control traffic overhead we have included Friendly Group model with distributed trust model so that it reduces the traffic overhead.

**Keywords:** Wireless Ad-Hoc Networks (WANs), FGA (Friendly Group Architecture)

**Intrusion Detection System Using AODV For Securing Blackhole Attack and Grayhole Attack in MANETS** **I-113**

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**ABSTRACT:** A MANET is one of the type of wireless network that does not require an infrastructure for deployment. It is a collection of mobile nodes that are connected to each other in a self-configurable, infrastructure-less, dynamic, and decentralized network. In this paper, we have focus on analysing and improving the security of routing protocol for MANETS through Ad hoc On Demand Distance Vector (AODV) routing protocol. We propose this algorithm for detecting blackhole and gray hole attack based on the technique of changing the sequence number present in control packets, in particular the Route Reply Packets (RREP), in order to identify the blackhole and grayhole nodes and thereby to minimize the data loss by discarding the route with such suspicious nodes.

**Keywords:** AODV, Black hole, receive reply, sequence number, routing table.

**A Review on Design and Development of IoT Based Pulse Oximeter** **E-151**

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**ABSTRACT:[1]** Measuring the heart rate, oxygen saturation level and blood pressure plays a vital role in human body. In many critical conditions measuring these parameters a very important when a patient is in critical condition so pulse oximeter is really necessary. Early pulse oximeter could only measure saturation level of oxygen. Later pulse oximeter evolved to measure pulse rate along with heart rate with temperature inbuilt control. Red and infrared sensors are used in pulse oximeter to detect heart beat and saturation level of the oxygen. In this paper pulse and saturation of oxygen can be calculated using different types methods that are easy and accurate to calculate. Alert system will alert the patients when there is drop of any level of the spo2 and heart rate.

**Keywords :** Spo2, Heart rate, Pulse rate.

**Efficient Routing Protocol for Data Transmission in M2M****E-152****Shreyas J<sup>1</sup>, Lavanya S<sup>1</sup>, Udayaprasad P K<sup>1</sup>, Srinidhi N N<sup>2</sup> and S M Dilip Kumar<sup>1</sup>**<sup>1</sup>University Visvesvaraya College of Engineering, Bangalore, India.<sup>2</sup>Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** WSN assisted IoT routing protocols are required to maintain a long network lifetime and achieve higher energy utilization. In this paper, a hierarchical structure for M2M network is proposed to support the efficient routing for IoT network. The proposed method is energy efficient for the transmission of data between single terminal node in wireless sensor node via cluster head. In the proposed system, the problem of heavy traffic that exist in M2M causes network congestion, is solved using load balancing solution. An integer-based non-linear optimization concept using genetic algorithm is proposed to achieve enhanced performance of the network in IoT network. For analysing the performance of each benchmark, the proposed work has been implemented in MATLAB simulation environment. The proposed energy aware GA is compared with existing baseline algorithm and obtained results indicates optimized energy utilization and increased throughput over existing approach.

**Keywords:** IoT, Machine-to-Machine, Genetic Algorithm and WSN

**Role of IoT in Health Care System****E-153****Prerana Chaithra<sup>1</sup>, Sahana A<sup>2</sup>, Suhana S<sup>3</sup>**<sup>1</sup>Associate Professor, Department of ISE, Sapthagiri College of Engineering, Bengaluru, Affiliated to VTU, India<sup>2</sup> Department of ISE, Sapthagiri College of Engineering, Bengaluru, Affiliated to VTU, India<sup>3</sup> Department of ISE, Sapthagiri College of Engineering, Bengaluru, Affiliated to VTU, India

**ABSTRACT:** Most notable technical emergence in Computer Science and Electronic engineering have been merged, Internet of Things. The term Internet of Things (IoT) is about the network made by the physical objects which have sensors, software, hardware, and other technologies for exchanging data with other systems and devices over the internet. In last few years the impact of IOT in healthcare has been significantly increased. In healthcare domain to increase reliability, accuracy and productivity IOT is playing a crucial role. With the population increase health issues are also rising and the necessity of technological solution is demanded. IOT is a new era technology giving hope in the medical health care system. IOT plays a major role in monitoring health.

**Keywords:** Internet of Things, Healthcare, issues, applications, computer science.

**IoT Based Smart Gas Leakage Detection & Alerting System****E-154****Rohan K H<sup>1</sup>, Navanika Reddy<sup>2</sup>, Pranamy Mady<sup>3</sup>, Sachit Girish<sup>4</sup>, Dr. Badari Nath K<sup>5</sup>**<sup>1-4</sup> Students, Department of CSE, R V College of Engineering Bangalore – 560059, India<sup>5</sup> Asst. Professor, Department of CSE, R V College of Engineering Bangalore – 560059, India.

**ABSTRACT:** Most of the fire-breakouts in industries are due to gas leaks. These cause dreadful damage to the equipment, human life and the environment. Currently available leakage detectors warn the people around using on-site alarms. So, this project proposes a leakage detector which sends the warning to the concerned people through email. This model senses the presence of LPG and Benzene. LPG is highly inflammable and results in blasts. Benzene when inhaled in higher concentrations affects the health of workers in industries since it is carcinogenic. Hence, this low-cost project uses MQ6 and MQ135 gas sensors which detect LPG and Benzene gas leaks respectively using Arduino -UNO ,Wifi Module ESP8266 and Thingspeak cloud. The concentration levels of the above-mentioned gases are uploaded in the cloud and displayed in the form of a real-time graph to the user. The prototype of the proposed system generates an email to the concerned person using IFTTT web service. An LED is also used as a visual alarm at the site of leakage.

**Keywords:** Gas Sensor, Arduino-UNO, Thingspeak, MQ-6, MQ-135, IFTTT, IOT

**Accident Prevention and Road Blockage Indication in Bike****E-155****Sai Chetan Poluri**

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**ABSTRACT:** This growing world has led us into easy life along with many problems, one such problem is Road Accidents. We can find many advanced equipment's in car but the safety for bikers is never considered. When a biker tries to change lane or takes some sharp cuts it may lead to accident with the vehicles coming behind. Most of the bike accidents result in death. Traffic jam due to sudden blocking of road can be considered as another problem. The drivers are completely unaware of the road blockage, so this leads to traffic jam or sometimes the drivers need to come back and choose other alternative way. This wastes a lot of fuel and time. While changing the lane, vehicles coming behind are identified and will warn the driver about them to take necessary steps in order to avoid the accident well in advance. Warning can be done through the LED lights or an alerting buzzer. The very first person who finds the blockage presses the simple button fitted in the bike. This press will update the location of driver on the interface, which helps other drivers coming behind to know about the road-blockage and choose other way by avoiding it. This reduces the traffic jam to some extent at least due to such sudden movements. We can conclude that such a small system can reduce the road accidents through bike to some extent and save lives of at least few people. This also helps in saving a lot of time and fuel by avoiding unnecessary traffic jams on road.

**Keywords:** Arduino, Bluetooth, GPS location, mobile interface and ultrasonic sensor.



**Attention Deficit Hyperactivity Disorder (ADHD) Detection and Providing Therapeutic Treatment Using IOT****E-156****Harini K, Pavithra R, Bharathy S**  
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**ABSTRACT:** ADHD is one of the neurological disorders among children, adolescents and even in adults. ADHD arises due to brain anatomy and function, genes and heredity, head injury, exposure to alcohol, toxins etc., The symptom includes limited attention, hyperactivity, irritability and persistent repetition of words or actions. The children with ADHD have poor academic performance and less parent- child relationship. ADHD is normally treated by using stimulants, cognition enhancing medications and counselling. The objective of our project is to provide non-invasive therapeutic treatment using a portable device. The portable device consists of pulse sensor, sweat sensor, and accelerometer sensor, the outputs of which will be displayed on the LCD Display. Then the therapy is carried out with the help of vibration motors which will improve blood circulation in body and makes them feel relaxed. Thus our device acts as a supportive therapy which helps in the speedy recovery of ADHD patients with minimum cost and minimum technical knowledge.

**Keywords:** ADHD, non-invasive therapeutic treatment, pulse sensor, sweat sensor, accelerometer sensor.

**Sentiment Analysis of Twitter using Machine Learning****I-201****Aiswarya M K<sup>1</sup>, Akshatha M<sup>2</sup>, Deepthi K N<sup>3</sup>, Dhanushree A G<sup>4</sup> Ms. Sushma M<sup>5</sup>**<sup>1,2,3,4</sup> CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>5</sup> Assistant Professor, Dept. of CS&E, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** Social media today makes a shift in lifestyle of many people. Twitter is often used for giving campaigns, critics and opinions that can make pros and cons. So, there are large amounts of textual data contained in twitter called big data. We can crawl the Twitter data and use it for Sentiment analysis to predict positive, negative or neutral sentiment. Finding the best combination algorithms is the key to success in sentiment analysis. Therefore, we compare the combination algorithms of preprocessing, feature extraction, feature selection and classification method. The proposed work attempts a novel approach on twitter data by aggregating an adopted polarity lexicon which has learnt from product reviews of the domains under considerations of the tweet specific features and unigrams to build a classifier model using machine learning techniques.

**Keywords:** Twitter, Sentiment Analysis, Positive, negative and neutral sentiment.

**Prediction of Students' Performance Based on Machine Learning****I-202****Aishwarya K L<sup>1</sup>, Amuthan Fathima<sup>2</sup>, Anjum Unnisa<sup>3</sup>, Bindu K<sup>4</sup>, Iranna S Amargol<sup>5</sup>**<sup>1-4</sup> UG students, CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>5</sup> Assistant Professor, CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** Performance evaluation of students is essential to check the feasibility of improvement. Regular evaluation does not just improve the student performance but also helps to understand where and what the student is lacking. It requires a great deal of manual exertion to finish the assessment cycle as even one school may contain a huge number of students. This paper proposed a computerized solution for the performance assessment of the students utilizing the machine learning Predicting performance exhibition of the students which can also be exceptionally helpful for instructive organizations for upgrading their educating quality. Student performance prediction is very important to understand a student progress rate.

**Keywords:** performance, progress rate, evaluation, students, feasibility.

**Object Detection using Artificial Intelligence and Machine Learning****I-203****Nitesh Kumar<sup>1</sup>, Punam Das<sup>2</sup>, Shruti Yadav<sup>3</sup>, Sourav Kumar<sup>4</sup>, Prof. Geetha Megharaj<sup>5</sup>**<sup>1,2,3,4</sup> UG students, CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>5</sup> Associate Professor, CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** Computer Vision is the field of artificial intelligence that trains computers to understand the visual world. Machines can accurately identify and classify the objects using digital images or videos and deep learning models. Object detection is the technique used to detect the objects in particular images or videos. With the continual development of object detection technology, the YOLO series of algorithms with very high precision and speed has been utilized in various scene detection tasks. We proposed this paper in order to detect the type of vehicles on road based on YOLOv5 model. We used this model with different parameters for training and testing. Our results shows that the algorithm proposed in this paper can easily recognize the type of vehicles which are in public places or in traffic areas.

**Keywords:** Computer Vision, Object detection, Yolov5.

**Predicting the Trends and Motif of Crime****I-204****Prof. Nagarathna C<sup>1</sup>, Shreegowri H D<sup>2</sup>, Ramyashree R<sup>3</sup>, Rakshitha R<sup>4</sup>, Nidhi S H<sup>5</sup>**<sup>2-5</sup> CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>1</sup> Asst. Prof., CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** Crime is one of the huge and influencing problems in our community and its prevention is an important duty. Day to day we are facing huge numbers of crimes perpetrated. It is required to keep all the crimes and maintain a database which may be used for future reference. The current problem we face are maintaining of actual dataset of crime and analyzing this data to help in predicting and solving crimes in future. Our work is to forecast which category of crime is most likely to occur at what place and what time. The Random Forest algorithm, regression linear and polynomial regression algorithms will be train and tested for crime prediction and one with better accuracy will be used for specification. The intention of this project is to give a design of how machine learning analysis of crime can be used by the law enforcement agencies to detect, forecast and solve crimes at a much fastened rate and thus decrease the crime.

**Keywords:** Crime, perpetrated, enforcement, Linear regression.

**Smart Shopping using Android Application****I-205****Vidyashree S<sup>1</sup>, Meghana K<sup>2</sup>, Manisha G<sup>3</sup>, Iranna Amargol<sup>4</sup>**<sup>1,2,3</sup> CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>4</sup> Faculty CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** In present Life, traditional shopping takes more time. The customer waiting in a long queue to pay bills is more time consuming and waste of energy for both the shopper and as well as the cashier. A smart shopping system using android application is being developed to overcome this problem. The growth of android applications around the world is extraordinary. People are towards technology to make life more innovative and make it easy by finding solutions to their problems. When it comes to shopping, it is very difficult for customers to find products around the supermarket and to stand in a long billing queue. So, an android application which is used in smart shopping carts to solve these dilemmas and create a better shopping experience. This shopping app consists of two parts which mainly focuses on navigation to item's location and automatic billing of the products that the user purchased using RFID. Android studio software, an open source software is used as a building environment.

**Keywords:** Traditional, supermarket, Virtual devices, navigation.

**Active Plant Wall for Green Indoor Climate Based on Cloud and Internet of Things** I-206**Dr. Srinidhi N N<sup>1</sup>, Bharath B<sup>2</sup>, Koushik M<sup>3</sup>, Rajanikanth R<sup>4</sup>**<sup>1</sup> Assistant Professor, Department of CSE, Sri Krishna Institute of Technology, B'lore-560090, India<sup>2,3,4</sup> UG Students, Department of CSE, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** Developing an autonomous plant monitoring system which will perform by sensing and autonomous operation is being used in wide applications. Indoor climate watching by the sensors and management is prevailing in several place like residential homes. Previous analysis has shown that a vigorous plant wall system will effectively scale back the concentrations of particulate matter and volatile organic compounds and stabilize the carbonic acid gas concentration in inside surroundings. In this work, a distant watching and system that is specific to the plant walls is being proposed. The system utilizes the Internet of Things technology and also Azure public cloud platforms to change the management procedure, improve the measurability, enhance user experience of plant walls and contribute to an inexperienced indoor climate.

**Keywords:** Autonomous Monitoring, Azure Cloud, Internet of Things, Plant Wall System.

**A Survey on Different Strategies for Stock Market Prediction Using Big Data Analytics**

I-207

**Priyanka B P<sup>1</sup>, Rashmi B<sup>2</sup>, Veena M Naik<sup>3</sup>**<sup>1,2</sup> Student ISE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>3</sup> Faculty ISE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** Big Data is an enormous volume of raw and unprocessed data. Almost every business and industry is greatly affected by data, and big data is now becoming extremely important. Big Data is utilized in many ways in the stock market. Gigantic information is utilized in numerous ways in the stock market. But it's not the size of information that's important. It's what organizations do with the information that's very important. Big information can be analyzed for experiences that lead to superior choices and vital trade moves. With the help of big data, it is easy to analyze the hot stocks as per the social media data and current affairs that affect the stock performance.

**Keywords:** Big Data, Survey , Stock Prediction, Data Mining.

**Machine Learning Approach for Prediction of Crop Yield****I-208****Ashwini V<sup>1</sup>, Yogitha M<sup>2</sup>, Veena M Naik<sup>3</sup>**<sup>1,2</sup> Student ISE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>3</sup> Faculty ISE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** India is a global agriculture powerhouse. The average productivity of many crops in India is quite low and the current situation faced by farmers in India leads to increase in suicide rate over years, due to the impact of climate change in country. Machine Learning (ML) techniques and climatic data helps in maximizing crops yield. The Machine Learning technique such as Recurrent Neural Network (RNN) is used for weather prediction and Machine Learning classification algorithms used are Decision Tree, Random Forest and Naïve Bayes which helps predicting suitable crops. Therefore, its necessary to build a model which takes into consideration of all the parameters for the better selection of crops which increases the crops yield.

**Keywords:** Agriculture, Recurrent Neural Network (RNN), Decision Tree, Random Forest, Naïve Bayes.

**Voice Assistant for Home Automation****I-209****Sadiya Firdose<sup>1</sup>, Rashmi N Raj<sup>2</sup>, Ankit Kumar Rai<sup>3</sup>, Sandhya B R<sup>4</sup>**<sup>1,2,3</sup> ISE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>4</sup> Faculty ISE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** In the world with ever increasing needs for comfort, human race is relying more and more on technological advancements to find solutions to their problems, Home Automation Systems have become a go-to arena in these days. With the advancement in virtual assistants like Google Assistant and Alexa, Home automation and Voice controlled applications are becoming normal and with the revolution of Information Technology (IT) and Artificial Intelligent, it has provided innovations in diverse kinds of home automation where appliances can be controlled effortlessly and seamlessly. A review of several home automation technologies is presented and the advantages of voice-based technology will be considered trending among other technologies in terms of flexibility, cost and comfort. The proposed project is designed to transmit voice command through user wireless microphone (attached to the user cloth) to the intelligence micro controller via Graphical User Interface. This can control our home appliances by just giving voice command. We can switch ON and OFF electronic gadgets and also recognizes the mask on a person's face.

**Keywords:** Artificial Intelligence, Face Mask Detection, Covid-19, Home Automation, Voice Command.

**A Survey on Edge Computing****I-210****Vinay Kumar B C<sup>1</sup>, Sushma M<sup>2</sup>, Sindhu G<sup>3</sup>, Shilpa<sup>4</sup>**<sup>1,3</sup> Faculty ISE Department, Sri Krishna Institute of Technology, Bangalore-560090, India  
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**ABSTRACT:** The Edge computing model has gained a lot of traction in academia and industry in recent years. Industrial spheres Many potential technology, such as 5G and the Internet of Things, depend on it. By linking cloud computing facilities and services to end users, the Internet of Things (IoT), virtual reality, and vehicle-to-vehicle communications can be realized. Low latency, mobility, and security are all advantages of the Edge computing paradigm. The edge computing platforms combine the Internet of Things and 5G networking dreams. At the edge of the network, there are computing, storage, and network services. The network serves as a storage infrastructure, allowing users to access information. Edge software can be developed and deployed rapidly by developers.

**Keywords:** Edge computing, Internet of Things (IoT), Collaborative Computing, survey.

**Upliftment of Indian Agriculture through Precision Farming****I-211****Pradheepa J.**

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**ABSTRACT:** Agriculture is the field which becomes more challenging field to face the shortage of man power required to cultivate the crops Precision agriculture is based on information technology, which enables the producer to collect information and data for better decision making. With the advent of artificial intelligence and machine learning (AI/ML), predictive and prescriptive analysis of even huge amounts of data is now possible .Sensors can be placed in the field to collect various data and based on the values collected, corresponding action can be taken remotely like spraying water and fertilizers etc .GIS and GPS can also be used to collect the data directly from the field.

**Keywords:** precision agriculture, sensors, GIS, GPS.

**Alleviate Insider Statistics Pilferage Blitz in the Cloud****I-212****Shruthi S<sup>1</sup>, Sandhya B R<sup>2</sup>, Ramya H<sup>3</sup>**<sup>1,2,3</sup>Faculty ISE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** Cloud computing allows to store our personal and business information. you can quickly spin up resources as you need them, deploying hundreds or even thousands of servers in minutes. We propose an approach for data security in the cloud using offensive decoy technology. We monitor data access in the cloud and detect abnormal data access patterns. When unauthorized access is suspected and then verified using challenge questions, we launch a disinformation attack by returning large amounts of decoy information to the attacker. This protects against the misuse of the user's real data. At the point when unapproved access is suspected and after that confirmed utilizing challenge questions, it dispatches a disinformation assault by returning a lot of imitation data to the assailant. This secures against the abuse of the client's genuine information.

**Keywords:** Cloud Computing, decoy technology, attacker, data security

**Cloud Security: Challenges and Concerns****E-251****Sahreen Sajad, Dr. Nagaraj G Cholli**

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**ABSTARCT:** Cloud Computing is an inextricable service in use that has become an essential part of technology. The facility is used in industrial as well as academic fields. As such, the security concerns posed to our data whether deletion, theft or leakage is a growing concern that needs an extensive research for us to deal with it. The data is highly susceptible to attacks and needs a proper research on the type of concerns our data is susceptible to. In this paper, we provide a detailed analysis on the cloud security and the concerns of the providers and the clients. This data can be used by researchers and technologists to know about various security threats and their effects. The data is provided with respect to different service models and additional security concerns. This paper aims to serve as a basis for engineers or technologists to provide solutions to the concerns raised here.

**Keywords**—Cloud Computing, Cloud Security, Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS), Shadow IT, Man-In-The-Middle Attack.

**Eco Friendly Green Cloud Computing****E-252****Prerana Chaithra<sup>1</sup>, Gouthami Kulkarni<sup>2</sup>, Vedika Amale<sup>3</sup>, Surekha R<sup>4</sup>**<sup>1</sup>Associate Professor, Dept of ISE, Saphthagiri College of Engineering, Bengaluru, Affiliated to VTU, India<sup>2,3</sup>Department of ISE, Saphthagiri College of Engineering, Bengaluru, Affiliated to VTU, India<sup>4</sup>Faculty of Mathematics, Sheshadripuram College, Bengaluru, Affiliated to BU, India

**ABSTRACT:** Cloud computing has played major role for storing and handling huge data by the virtualization of data centres and servers to make them very efficient. Cloud computing gives computing power and acts as a service provider to users around the world. This provides customers with high performance at a lower cost compared to dedicated high-performance computing machines. IT sectors consume large amount of power and energy, resulting as a main source of Carbon dioxide emission. To overcome this, we need Green Cloud Computing for IT resources to be energy efficient and operating at cheaper cost. In order to reach optimal standards for green-cloud computing, the efficiency of power of the Cloud must be meticulously analysed. Cloud computing is a better alternative being greener than individual data centres with lesser number of servers being used and cloud data centres being far more efficient than those of traditional thereby reducing the carbon impact.

**Keywords:** Cloud Computing, Carbon dioxide emission Green cloud computing, Clustering, Data Virtualization, Proportional Computing, Energy efficiency

**Survey on Cryptographic Algorithms in Cloud Computing****E-253****Kota Anjani Vaibhavi, Dr. Nagaraj G Cholli**

R.V. College of Engineering, Bengaluru - 560059, India.

**ABSTRACT:** In the modern world, many companies and organizations manage a lot of data and they require a platform to store this data. So to fulfill this purpose cloud computing is introduced. Cloud is a platform where we can store the data, files, media etc. in a way that we can access it at any time and perform modifications to it. So when a user or any company stores its data in a trusted cloud, the main duty of the cloud service provider is to ensure the safety of the data. That is the data should be stored efficiently without any errors or discrepancies. It shouldn't be accessed by unauthorized users or any malicious attackers because that data in the wrong hands can cause a lot of damage. To overcome the drawbacks in the cloud computing and make it more secure and efficient, we have come up with cloud cryptography. This is done to ensure that the data is properly stored and is safe inside the cloud. This paper gives the idea of what is cloud cryptography, why is it needed and its pros and cons.. It describes some of the different techniques of cryptography and compares them.

**Keywords:** Cryptography, encryption, authorization, plain text, cipher text, misconfiguration, phishing, DDOS, malware, provenance, remanence, compliance, symmetric and asymmetric algorithms.



**Decoding Brain EEG Signals to Find State of Mind Using AI****E-254****Mrs. M. Kiruthiga Devi<sup>1</sup>, Shivakami.A<sup>2</sup>, Aravindha Mira R<sup>3</sup>, Karpagam A<sup>4</sup>**<sup>1</sup>Assistant Professor, Sri Sai Ram Engineering College, Chennai, India<sup>2,3,4</sup>Students, Sri Sai Ram Engineering College, Chennai, India

**ABSTRACT:** Emotions are primordial for human beings and they play a key role in human intelligence. Emotion is basically connected with sight, human correspondence and logical decision making. Now a days the need for attested and dependable remedies for the recognition of human emotional states is obligatory due to the rise in interest of upcoming researchers towards establishing some significant emotional interactions between humans and computers. By analysing the features of electroencephalography (EEG) signals, which are generated from EEG sensors that noninvasively measure the electrical activity of neurons inside the human brain, we select the optimal combination of the features for recognition. Then the signals are pre-processed using Hjorth parameters that measure signal activity of time-series data. The classification of signals obtained is based on supervised pixel classification. By using convolutional neural networks(CNN) the signal feature obtained is compared with the parameters set and thus it detects the state of mind whether the patient is happy, depressed or anger and the output generated will be in a text format. This is very much beneficial in many sectors especially in health sector where dealing with patients diagnosed from Locked In Syndrome, coma and various neuropsychiatric disorders .By detecting the emotional state of the patient which means to detect whether they are depressed or anger or happy and it will help the doctors in treating them in a better way and the patient can recover soon. In case of depression it is mandatory to treat those kind of patients or else they may take some psychotic decisions like suicide or they may become mentally weak. Similarly if the emotional state detected is anger, then we can make them happy by doing what they like which will help to make them normal In patients diagnosed with locked in syndrome their full body will be paralyzed except their eye muscles They can think, feel emotions, sense smell but cannot move. If we detect their state of mind it will be more beneficial in treating them..The accuracy of the overall project will be around 83%.Our approach shows better performance compared to existing algorithms

**Keywords:** CNN,Hjorth.parameters,Electroencephalography(EEG),Coma,neuropsychology,Locked in Syndrome

**Multipurpose Card Using RFID Technology****I-301****Nagarathna C<sup>3</sup>, Bharath K R<sup>1</sup>, Sarathy V V<sup>2</sup>**<sup>1,2</sup> UG students CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>3</sup> CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** In this modern world, we carry different cards such as debit cards, credit cards for shopping or any money transactions, identity cards for identity or verification purposes, metro cards for traveling, special cards for tolls and parking and many more cards as such. The smart card implementation can be seen around the globe but they are unique i.e. each developer uses different programming standards and data structures and each purpose has different cards. The smart card will provide service to the verified user only within a preferred area or an organization. To make available such multiple application access using a single card to every person we have planned to use RFID technology, which is cost-effective. As RFID technology is used in the proposed concept, the programming standards, and structures will be unified. Unlike the smart card, the multipurpose card using RFID technology can be used by every person to access different applications. Thus, a person needs not to carry several cards; he can just carry a single card for many purposes.

**Keywords:** RFID, Multipurpose.

**Stock Price Predictor Using Deep Learning****I-302****Lekhana C<sup>1</sup>, Manikanta Reddy N<sup>2</sup>, Manohara V<sup>3</sup>, Nalina H N<sup>4</sup>, Nethra H L<sup>5</sup>**<sup>1-4</sup> CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>5</sup> Assistant Professor, CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** The challenge of this project is to accurately predict the longer term closing worth of a given stock across a given amount of your time within the future, within the past few years we have seen millions of tutorial papers printed victimization neural nets to predict stock costs with varied degrees of success however till recently the flexibility to create these models has been restricted to lecturers. Currently with libraries like tensor flow anyone will build powerful prognostic models trained on huge of datasets. For this project I'll use a protracted Short Term Memory networks – typically simply referred to as “LSTMs” to predict the terms of the S&P five hundred employing a dataset of past costs.

**Keywords:** Stock, deep learning, LSTM, SAEs .

**Air Pollution Hazard Assessment Using Decision Tree****I-303****Anupama L<sup>1</sup>, Arpitha K P<sup>2</sup>, Bhanupriya B H<sup>3</sup>, Bhavya H S<sup>4</sup>, Rashmi K T<sup>5</sup>**<sup>1,2,3,4</sup> UG Students, CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>5</sup> Associate Professor, CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** Air nature of a particular region can be used as one of the essential issue choosing pollution record in like manner how well the city's ventures and people is regulated. Metropolitan air quality checking has been a predictable test with the presence of industrialization. Air pollution has remained a critical test for individuals by and large and the public power wherever on the world. Air defilement makes noticeable mischief the environment similarly as to human prosperity happening into destructive storm, a perilous air deviation, heart ailments and skin harm to people. This paper watches out for the trial of predicting the Air Quality Index (AQI), with the hope to restrict the defilement before it gets disagreeable, using two Machine Learning Algorithms: Neural Networks and Support Vector Machines. The air defilement informational collections were removed from the Central Pollution Control Board (CPCB), Ministry of Environment, Forest and Climate change, Government of India. The results show improvement of the figure precision and suggest that the model can be used in other canny metropolitan networks as well.

**Keywords:** Air pollution, Air Quality index, Machine Learning Algorithms, Neural Network, Support Vector Machine

### Deep Learning based Trusted Model for Pervasive Computing using a LSTM-based Classification Model

I-304

**Md Saif Alam<sup>1</sup>, Bibek Kunwar<sup>2</sup>, Biraj Pandey<sup>3</sup>, Lokesh H D<sup>4</sup>**

<sup>1,2,3</sup> CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India

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**ABSTRACT:** Pervasive computing is the rising trend of embedding computational capability into each day objects to make them successfully communicate and perform helpful tasks in a approach that minimizes the end user's need to cooperate with computers. The role of Pervasive computing is foremost in the field where it provides the facility to distribute computational services to the surrounds where people work and leads to issues such as faith, privacy, and uniqueness. To provide an optimal solution to these generic troubles, the proposed research work aims to put into practice a deep learning-based pervasive computing architecture to address these troubles. Long short-term memory construction is used during the growth of the proposed trusted model. applicability of the projected model is validated by compare its performance with the generic back-propagation neural network. This model outcome with an accuracy rate of 93.87% for the LSTM-based model much superior than 85.88% for the back propagation based deep model.

**Keywords:** Pervasive computing, deep-learning, deep model, LSTM.

### Smart Wheelchair

I-305

**Mrs. Nagarathna C, Gunashree Y, Megha.B.S, Shashank.Y. K, U. Agneya Udupa**

CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India.

**ABSTRACT:** Every single person in this world has an aspiration to live a regular human life but unfortunately accidents, diseases and elder-ship make their desire into defect. Moreover, there are lots of elders and handicaps as well as paralyzed, the count keeps increasing people day by day. They are always dependent on another person to move and have to go under some physical therapies under the guidance of a therapist to recuperate their strain back. The proposed system helps the user to move safely and freely, also takes the manoeuvre of a therapist in a cost effective manner. A smart wheelchair is developed by using eye controlled system to control the movement of wheelchair. Besides, the automatic obstacle detection facility provided by an ultrasonic system. Since our project deals with designing a system that allows the user to interact with the smart wheelchair at different levels like avoidance of collision from obstacle detection which provide efficient risk management and an additional feature where the smart wheelchair can be converted into a bed, it greatly reduces the dependency on caretakers or family members The wheelchair provides safety by espousing features such as avoidance of collision through obstacle detection and hollow .detection to avoid danger which they might encounter in their day to day life such as stairs, potholes, etc.

**Keywords:** Wheelchair, Image-Processing, Paralised.

**Social Distancing and Face Mask detection using Deep Learning****I-306****Spoorthi R<sup>1</sup>, Nikitha S<sup>2</sup>, Rakshith V Gowda<sup>3</sup>, Kiran D K<sup>4</sup>, Mr. Pradeep Kumar<sup>5</sup>**<sup>1-4</sup> CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>5</sup>Faculty CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** In the recent outbreak and rapid spread of COVID-19 pandemic, it is necessary for public to maintain social distance and wear masks. Conferring to the World Health Organization (WHO), to track social distancing, people in public places must maintain at least 2mt distance between each other. This paper focuses on a resolution to help impose proper social distancing and wearing masks in public using Convolution neural network (CNN) models like YOLOv3 and Retina MobileNetv2 for social distance and face mask detection respectively on video and images in real time. Test results presume detection of masked faces and human focuses dependent on YOLOv3 has fastest detection speed when contrasted with its rivals. Analyses were performed on numerous human datasets obtaining an accuracy of 95% and above. This model diminishes manpower to inspect the public and likewise can be used in any place.

**Keywords:** CNN, YOLOv3, Retina MobileNetv2

**E-FARMING****I-307****Navya A M<sup>1</sup>, Ranjini M<sup>2</sup>, Shabana A<sup>3</sup>, Sowmya M<sup>4</sup>, Kavya M<sup>5</sup>**<sup>1-4</sup> CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>5</sup> Assistant Professor, CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** Mobile phones are used everywhere, and android is that the primary OS (operating System) dominating the mobile OS market field with a market share of over 80% and most of the applications are liberal to download. We are targeting the horticulture sector during which smart phones may be accustomed to provide the farmer with the small print. Most of the population depends on farming for survival. Many farmers aren't aware of the skin world and also the technical advancement about farming. Most of the farmers doesn't have any idea to the rates of the crops and their products that they sell their product at any worth. In a globalized world today, agriculturist gets news content from newspapers, magazines, and TV. So we've got a bent to create a platform for farmers who are victimization smart phones where they're going to get the important time updates relating to the vegetables, fruit rates of each market in the Asian country that they are prepared to sell their product at the proper rates.

**Keywords:** Horticulture, AgroMobile, distant market, Farmers.

**Precision-Agriculture: An ImageNet -Based Multilayer Convolution Neural Network for Leaf Disease Detection in Coffee Plant in Early-Stage System** **I-308**

**Shubhashini Pal<sup>1</sup>, Ashritha P<sup>2</sup>, Shruti B P<sup>3</sup>**

<sup>1,2</sup> ISE Department, Sri Krishna Institute of Technology, B'lore-560090, India

<sup>3</sup> Faculty ISE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** Coffee is one of the most important cash crops, known best for its delicious taste. Carefully roasted beans are manufactured to produce popular beverages that are consumed worldwide. Coffee beans are grown along the Equatorial zone called “The Bean Belt”, in over 70 countries. World coffee production is estimated to have produced 155 million 60-kilogram bags, with that figure rising annually. Commercial farming of coffee beans is an excellent business and one can obtain desired profits under ideal crop practices. Fungal diseases not only influence the economic importance of the plants and its products but also abate their ecological prominence. Coffee grown in the forests of India, the world's sixth largest producer of coffee, is cultivated under thick canopies in the Western Ghats-a UNESCO World Heritage site and one of the world's most important biodiversity hotspots. In the 2016-17 season, India produced 5.5 million bags of coffee. Coffee plants, specifically the fruits, berry and the leaves are highly affected by the fungal disease named as Cercospora, Miner, Phoma, Rust. The main aim of this paper is to develop an appropriate and effective method for diagnosis of the disease and its symptoms, therefore espousing a suitable system for an early and cost-effective solution of this problem. Over the last few years, due to their higher performance capability in terms of computation and accuracy, computer vision, and deep learning methodologies have gained popularity in assorted fungal diseases classification. Therefore, for this paper, a multilayer convolutional neural network (MCNN) is proposed for the classification of the Coffee leaves infected by the fungal diseases.

**Keywords:** Convolutional neural network, image classification, plant pathology, precision agriculture, deep learning, image processing.

**Modern Age Agriculture – Deploying Deep Learning Techniques** **I-309**

**Shravani H A<sup>1</sup>, Nirmala V<sup>2</sup>, Shruti B P<sup>3</sup>**

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**ABSTRACT:** Agriculture is the primary source of basic needs like food, raw material and fuel, which are considered as the basic building blocks for the economic growth of any nation. The agricultural products are threatened by various factors which includes decline in pollinators, various diseases in crops, improper irrigation, technology, scarcity of water and many others. Deep learning (DL) incorporates a modern technique for image processing and big data analysis with large potential. Deep learning is a recent tool in the agricultural domain, which is being successfully applied to other domains. Deep learning techniques are applied to various agricultural problems, such as disease detection/identification, fruit/plants classification and fruit counting among other domains. The conclusions indicates that the deep learning provides higher accuracy results, surpassing with occasional exceptions, alternative traditional image processing techniques in terms of accuracy. In this paper, a comprehensive review of research dedicated to applications of deep learning for modern agriculture is presented along with real time applications and tools. The findings exhibit the high potential of deploying deep learning techniques for modern age agriculture.

**Keywords:** Deep Learning, Convolutional Neural Networks, Artificial Neural Networks, Image Processing.

**Super Resolution CNN Algorithm to Improve the Quality of Degraded Images I-310****Pradeep Kumar K<sup>1</sup>, Kiran Kumar. A<sup>2</sup>, Prof. Punitha M.R.<sup>3</sup>, Ms. Pooja H B<sup>4</sup>**<sup>1</sup> Assistant Professor, Sri Krishna Institute of Technology Bangalore, 560090<sup>2</sup> Assistant Professor, Reva University, Bangalore, 560064<sup>3</sup> Assistant Professor, Oxford College of Engineering, Bangalore, 560068<sup>4</sup> UG Student Government Engineering college Ramanagara, 562159

**ABSTRACT:** Huge information carries advantages to numerous territories of logical exploration, anyway handling these a lot of information regularly requires broad registering time and a huge extra room. Super Resolution project, thinks about critical areas, and accordingly proposes another super goal approach that utilizes huge and wide-ranging data under the structure of a CNN. The preparation interaction is accomplished for the huge pieces of informational collection, reproduction cycle which are been considered critical parts independently. The focal point of Super Resolution is to create a higher goal picture from lower goal pictures.

**Keywords:** logical exploration, High Resolution Low Resolution, Convolution Neural Network.

**Unmanned Aerial Vehicle Assistance in a Catastrophic Event (UAV) I-311****Prof. Nagarathna C<sup>3</sup>, Chethan H N<sup>1</sup>, Anupam Subhash<sup>2</sup>**<sup>1,2</sup> UG Students, CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>3</sup> Assistant Professor, CSE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** The rapid development of Unmanned Aerial Vehicles (UAVs) and their use in various domains has ushered in a new era of UAV use in natural disaster management. UAVs assist in developing a contact network between disaster survivors, rescue teams, and nearest accessible cellular infrastructure in UAV-assisted disaster management applications. The key disaster management applications of UAV networks are identified, and open research issues related to UAV-supported disaster management are discussed in this paper.

**Keywords:** Accessible, Rapid, Survivors, Ushered.

**Face Detection by Using Hand Drawn Sketch****I-312****Prof. Manzoor Ahmed<sup>1</sup>, Prof. Imranulla Khan<sup>2</sup>**<sup>1</sup>Asst. Prof., Dept. of ISE, Sri Krishna Institute of Technology, B'lore-560090, India<sup>2</sup>Asst. Prof., Dept. of CSE, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** Facial sketches are most broadly used in law enforcement businesses for identification of suspect, which may additionally contain in several crook sports. Facial sketches are in particular importance whilst eyewitness or sufferer's description is the best form of evidence to be had. The previously proposed systems made use of databases called as mugshots. Our proposed system, detects and recognizes the human face based on sketches provided by the eyewitness and is enhanced with a real-time approach. The real-time image is captured through a camera. The facial feature extraction is done with the help of PCA algorithm and Eigen transformation method. These features are then compared to the sketch to in order to know our suspect. Thus the system helps to locate or narrow down our potential suspects. It can be used in identification of suspects in criminal activities and to aid forensic investigation. The system aims to provide robust results and is implemented with the help of MATLAB to give a superior performance with the real-time approach.

**Keywords** – sketches, face recognition, image processing, machine learning, MATLAB, PCA algorithm.

**Detection Of BRCA1 And BRCA2 Genes Mutation in Breast Cancer Development****I-313****Dr. Hemalatha K. L<sup>1</sup>, Naveena S R<sup>2</sup>**<sup>1</sup>ISE Department, Sri Krishna Institute of Technology, B'lore-560090, India<sup>2</sup>ISE Department, Sri Krishna Institute of Technology, B'lore-560090, India

**ABSTRACT:** Breast cancer is the most commonly diagnosed cancer among women in the world. Substantial progress has been made in diagnosing and treating breast cancer. Germline or familial mutations in the genes BRCA1 and BRCA2 account for only a proportion of hereditary breast cancer. A heterozygous variant in the ataxia-telangiectasia has a substantial breast cancer risk. The completion of the Human Genome Project gives us knowledge of the genetic variations that presumably underlie the fact that a family history of cancer is a risk factor for most cancer types. It has been observed that there are more families with multiple cases and increased risk of breast cancer among women with a family history of the disease. The main aim is to find out the gene that are most significant and non-significant among all the genes present in the breast cancer tissue using microarray data analysis and clustering.

**Keywords** - Mutations, Oncology, K-means, Clustering, Microarray.

**Review Paper on Design and Development of DMFC using PVA-PANI  
Composite on Nafion Membrane**

**E-351**

**Yalpi Nandika<sup>1</sup>, Varshitha S<sup>2</sup>, Poorvi H J<sup>3</sup>, Yathish S Rao<sup>4</sup>**

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**ABSTRACT** - The direct methanol fuel cell (DMFC) is the replacement of lithium-ion batteries in almost all the portable electronic gadgets, in which current DMFCs operate at twice the power density of current lithium-ion batteries with instant refuel competence. It's known that, the DMFC will provide higher power densities, only if the core of this fuel cell – the polymer electrolyte membrane (PEM) – were more resistant to the fuel (methanol). Therefore, the design and development of Nafion® (the most commonly used PEM in fuel cells) substitutes that exhibit high proton conductivity and low methanol permeability (high selectivity) is an active area of research. Polymer blends are a modest and lucrative method to progress membranes that conjoin the desired transport properties. To date, there is partial research in the area of PEM blends, and furthermore, a number of unresolved questions. In this study, the properties of blend composition, chemistry, and processing on polymer morphology and afterward the transport properties and selectivity were examined. An important effect in this study is comparison solution of cast membranes to heat pressed membranes. The final objective is to match both the membranes to provide immiscible blends with low selectivity, while also with the literature survey annealed solution cast membranes improved miscibility and subsequently selectivity. The outcome with this study is to find the DMFC performance of an annealed solution cast blend membrane of Nafion®/poly (vinyl alcohol) (PVA) (with only 5 wt% PVA) was 33% higher than Nafion® (the commercial standard) at a high methanol fuel concentration.

**Keywords:** Direct methanol fuel cells, crossover methanol, polymer electrolyte membranes, permeability methanol, composite membranes, electrolyte, PEM, fuel cells, electrolyzers.



**Visual Analytics System for Evaluating IVF Data Predicting Live Birth****E-352****Gowramma G S<sup>1</sup>, Dr. Shantharam Nayak<sup>2</sup>, Dr. Nagaraj Cholli<sup>3</sup>**<sup>1</sup>Research Scholar-VTU, Associate Professor, Don Bosco Institute of Technology, Bangalore-560074, India<sup>2</sup>Department of CSE, Sri Krishna Institute of Technology, Bangalore, India<sup>3</sup>Department of ISE, R. V. College of Engineering, Bangalore, India

**ABSTRACT:** Research into the impact of In Vitro Fertilization (IVF) enables customer systems is still in its infancy. Little is known about effective designs and visual analytics by applying the concept of machine learning, how people use these systems in their real-life settings and how the patient can virtually analyses the records by viewing the essential attributes used for building the project. A method is built to represent a tool to support decision making for patient analysis with fertility problems. To design and future development by assessing how patients undergo invitro fertilization (IVF) using a visual analytics system in their real life setting and how it could be used for data visualization of patients records with the help of machine learning concept and some of the python libraries for plotting. The concept of IVF can be extended to find out excellent co-relations between the attributes used in the dataset and visually displaying them using the concept of data visualization.

An in-depth formative evaluations of the essential attributes which are necessary for the IVF treatment are achieved by data visualization. Data Visualization is presenting the data in graphical format. It helps people understand the significance of data by summarizing and presenting huge amount of data in a simple and easy-to-understand format and helps communicate information clearly and effectively. In this Paper, we will make use of data visualization for IVF dataset in order to find out variety of relationships between the attributes and presenting in graphical format which is easy to understand.

**Keywords:** IVF, Data Pre-Processing, Data Visualization, Machine Learning.

**PHOTO GALLERY**



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**Host : Department of Computer Science & Engineering**

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**"Recent Trends in Computer Science & Information Technology" [RTCSIT-2021]**  
 On Friday, the 11<sup>th</sup> June 2021 at 9:30 am

**Chief Guest**  
**Prof. K.K. Aggarwal**  
 Chairman, CSE, IIT Madras, Hyderabad  
 and Director, IIT Madras (on leave)

**Guests of Honor**  
 Mr. Murali Kadlag, R. Dr. V. Raghavendra  
 Corporate, Manager, Classfly, Bengaluru. Director, SKIT, Bengaluru

**Dr. Manjunatha A.**  
 Director, SKIT, Bengaluru  
 will preside over the function

**Prof. Ganesh T. Meghwal**    **Dr. Hanumanth K. S.**    **Dr. Shashikanth Nayak**  
 Director, IIT Madras    Director, IIT Madras    Director, IIT Madras

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**Programme Schedule (9:30 am to 10:20 am)**

1. Invocation Song	2 Mins
2. Welcome Address	2 Mins
3. Lighting the lamp	2 Mins
4. Reference of the Conference	2 Mins
5. Release of SOUVENIR by Guest	2 Mins
6. Introduction of the Chief Guest	2 Mins
7. Inaugural Address by Chief Guest	15 Mins
8. Introduction of Keynote speaker	2 Mins
9. Keynote Address by Guest	15 Mins
10. Presidential Address	5 Mins
11. Vote of Thanks	2 Mins

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