

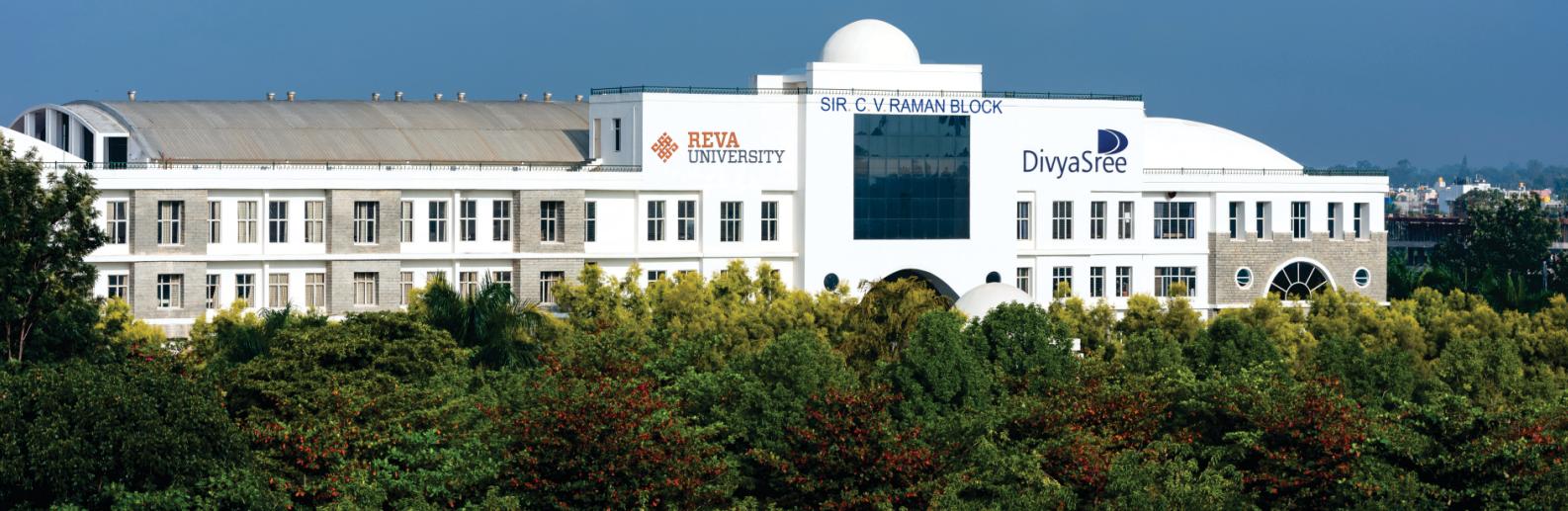


# **International Conference on Advances in Computing and Information Technology (IACIT-2019)**

**Organized by**

**School of Computing and Information Technology**

**10th - 11th May 2019**





# **PROCEEDINGS OF**

## **INTERNATIONAL CONFERENCE ON ADVANCES IN COMPUTING AND INFORMATION TECHNOLOGY (IACIT-2019)**

**10<sup>th</sup> & 11<sup>th</sup> May 2019**

**Organized by**  
**School of Computing and Information Technology**

**Venue:**  
**Swami Vivekananda Block,**  
**REVA University,**  
**Rukmini Knowledge Park,**  
**Yelahanka,**  
**Bengaluru-560064**

**[www.reva.edu.in](http://www.reva.edu.in)**

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**INTERNATIONAL CONFERENCE ON  
ADVANCES IN COMPUTING & INFORMATION  
TECHNOLOGY**

**IACIT-2019**

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1	Messages
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## MESSAGES



### **Message from Chancellor:**

Technology has always been at the forefront of our vision for education at REVA. In every domain of function at REVA our efforts are on to ensure our students are equipped with several portable technological devices at any given point of time. I am happy to note that School of Computing and Information Technology is hosting a two day International conference with focus on "**Advances in Computing and Information Technology**" [**IACIT-2019**]. A forum like this Conference involving Researchers, Developers and Users from both Academia and the Industry will only enable us bridge the gap between the industry and academia. Glad to note that the School of Computing and Information Technology has taken this step forward to bridge this gap. With the classroom having already evolved into a hotbed of technological advances, I am sure with Conferences of this stature, we could anticipate what the future possibly holds that could further educational proficiencies even more. I wish the Conference all Success and congratulate the team of School of Computing and Information Technology all the best!

**Dr. P. Shyama Raju**  
Chancellor,  
REVA University,  
Bengaluru, India



### **Message from Vice-Chancellor:**

I am delighted to note that the School of Computing and Information Technology is organizing a two day International Conference entitled "**Advances in Computing and Information Technology**" [**IACIT-2019**]. Certainly, this type of conference not only brings all the researchers, students at one platform, but it also inculcates the research culture among the entire fraternity of Education in the country, thereby, contributing to the development of nation.

I hope that this conference would certainly induce innovative ideas among the participants paving way for new inventions and technologies in the Computing and Information Technology.

I congratulate the Director, staff and students of School of Computing and Information Technology for initiating the conduction of such a conference.

I wish the conference a grand success.

**Dr. S.Y. Kulkarni**  
Vice Chancellor,  
REVA University,  
Bengaluru, India



### **Message from Registrar:**

The science and engineering research conducted in academic institutions, industry, R&D Laboratories and elsewhere plays a critical role in raising our standard of living, creating jobs, improving health and providing for national security and development. I am extremely happy to note that School of Computing and Information Technology, REVA University is organizing a two day International Conference entitled "**“Advances in Computing and Information Technology” [IACIT-2019]**".

I am sure that the conference of this type will inculcate the much needed research culture among the students and teachers and trigger interactions among researchers to exchange the ideas of recent advances in the areas of Computing and Information Technology

I wish the conference a grand success.

**Dr. M. Dhanamajya**  
Registrar, REVA University,  
Bengaluru, India



### **Message from Director, R&D:**

Research and Innovations in REVA University is regarded as one of the most important activities besides teaching and learning. The university with dedicated & qualified faculty, dynamic research scholars, moderate research facilities, well drafted research quality assurance guidelines, and supportive management provides an excellent ambience to pursue research. Research circles, mentored by senior faculty members are active in all the schools and are primarily responsible for cultivating interdisciplinary research cultures in students and faculty.

The university encourages dissemination of research outcomes to the society through conferences such as this one being organized by the school of Computing & IT, so that scientific debates trigger exchange of ideas among the research community resulting in solutions for the welfare of the society.

I congratulate the school director, coordinators, reviewers, students and faculty for their contributions to this two day International Conference entitled "**Advances in Computing and Information Technology**" [**IACIT-2019**] and I wish the researchers all the best for their future research endeavors.

**Dr. B. P. Divakar**  
Director, R&D, REVA University,  
Bengaluru, India



### **Message from Director, School of C & IT:**

The conferences have to be organized at various levels to offer a platform to various levels of researchers. This two day International Conference entitled “**Advances in Computing and Information Technology**” [**IACIT-2019**] provides a forum to all researchers to exchange the information on research and innovations and enhance the quality of research. The Technical committee of the conference has reviewed articles to maintain the quality interactions and publications by using anti plagiarism software and feedback from reviewers.

The conference provides a platform for researchers to get networked and exchange the ideas on various areas such as data analytics, wireless networks, app development, data mining, image processing, pattern recognition and applications of IT.

High quality deliberations that happen in conference will lead to high standard publications at international levels which feed into the industry's innovation pipeline. Industry expects such inputs to create innovation and the next big things.

I wish all the participants a happy stay in campus and a fruitful interaction on their works.

**Dr. Sunilkumar S. Manvi**  
Director, School of Computing and Information Technology,  
REVA University,  
Bengaluru, India.

**INTERNATIONAL CONFERENCE ON ADVANCES IN COMPUTING AND INFORMATION TECHNOLOGY  
(IACIT-2019)**

	Time	Title				
<b>Day 1: Friday, 10th May 2019</b>	8:45am to 9:45am	Registration @ Desk, In front of Swami Vivekananda Block.				
	9:45am to 10:30am	Inauguration @ Legal Studies Seminar Hall, Basement, Swami Vivekananda Block.				
	10:30am to 10:45am	Tea Break				
	10:45am to 11:45am	<b>Keynote 1:</b> Dr. Rajkumar Buyya <b>Title:</b> New Frontiers in Cloud and Edge/Fog Computing for Big Data & Internet-of-Things Applications <b>Venue:</b> Legal Studies Seminar Hall, Basement, Swami Vivekananda Block.				
		Basement Seminar Hall - 1	Basement Seminar Hall - 2	Legal Studies Seminar Hall	7 <sup>th</sup> Floor Seminar Hall	Library Seminar Hall
	Session - 1 11:50am to 1:00pm	S1.1: Data Mining & Artificial Intelligence.	S1.2: Data Mining & Artificial Intelligence	S1.3: Data Mining & Artificial Intelligence	S1.4: Mobile Computing and Cloud Computing and Security	S1.5: Mobile Computing and Cloud Computing and Security
	Paper ID's	159,166,169,170,171,174	254,260,265,268,269,274	347,348,350,357,358,367	163,164,165,172,173,178	229,231,232,235,237,242
	1:00pm to 2:00pm	Lunch Break				
	Session - 2 2:00pm to 3:10pm	S2.1: Data Mining & Artificial Intelligence	S2.2: Data Mining & Artificial Intelligence	S2.3: Data Mining & Artificial Intelligence	S2.4: Mobile Computing and Cloud Computing and Security	S2.5: Mobile Computing and Cloud Computing and Security
	Paper ID's	179,181,184,187,203,204	277,281,303,304,306,308	368,372,374,378,380,381	191,202,206,208,221,228	245,250,271,272,301
	Session - 3 3:10pm to 4:20pm	S3.1: Data Mining & Artificial Intelligence	S3.2: Data Mining & Artificial Intelligence	S3.3: Data Mining & Artificial Intelligence	S3.4: Data Mining & Artificial Intelligence	S3.5: Mobile Computing and Cloud Computing and Security
	Paper ID's	213,214,225,238,246	309,310,313,314,326	385,389,393,394	395,399,402,403	317,319,320,369,373
	4:20pm to 4:30pm	High Tea				

**Day 2: Saturday, 11<sup>th</sup> May 2019**

9:00am to 10:00am	<b>Keynote 2:</b> Dr. L M Patnaik <b>Title:</b> A Synthesizing Overview of Artificial Intelligence <b>Venue:</b> Legal Studies Seminar Hall, Basement, Swami Vivekananda Block.				
10:10am to 11:10am	<b>Keynote 3:</b> Dr. Ashish Ghosh <b>Title:</b> Artificial Intelligence for Society <b>Venue:</b> Legal Studies Seminar Hall, Basement, Swami Vivekananda Block.				
11:10am to 11:30am	Tea Break				
	Basement Seminar Hall - 1	Basement Seminar Hall - 2	Legal Studies Seminar Hall	7 <sup>th</sup> Floor Seminar Hall	Library Seminar Hall
Session - 4 11:30am to 1:00pm	S4.1: Internet of Things & Wireless Sensor Networks	S4.2: Internet of Things & Wireless Sensor Networks	S4.3: Internet of Things & Wireless Sensor Networks	S4.4: Digital Image Processing	S4.5: Neural Networks & Deep Learning.
Paper ID's	167,185,188,194,198, 205,209,212	282,285,289,296,299, 302,305,311	362,363,364,366,371, 382,387,388	239,244,247,252,257,273	190,223,263,275,280, 312,329,360
1:00pm to 2:00pm	Lunch				
Session - 5 2:00pm to 3:10pm	S5.1: Internet of Things & Wireless Sensor Networks	S5.2: Internet of Things & Wireless Sensor Networks	S5.3: Digital Image Processing	S5.4: Digital Image Processing	S5.5: Natural Language Processing & Embedded Systems.
Paper ID's	216,220,226,233,241,253	316,321,322,327,331,343	162,183,193,195,199,200	279,284,287,290,295,352	152,182,243,256,266,370 ,375
Session - 6 3:10pm to 4:00pm	S6.1: Internet of Things & Wireless Sensor Networks	S6.2: Internet of Things & Wireless Sensor Networks	S6.3: Digital Image Processing	S6.4: Digital Image Processing	NIL
Paper ID's	261,270,276,278	349,351,353,354	201,207,219,224	355,356,359,376	NIL
4:00 pm to 4:15pm	Informal Valedictory @ Legal Studies Seminar Hall, Basement, Swami Vivekananda Block.				
4:15pm onwards	High Tea				

## TECHNICAL SESSION SCHEDULE: IACIT – 2019

Friday, 10<sup>th</sup> May 2019

### Data Mining & Artificial Intelligence.

Session 1: Track 1 11:50am to 1:00pm  Basement Seminar Hall – 1 S.V Block	Paper ID	Title of the Paper
	IACIT-159	Retail Assortment Planning Using Data Science <i>Kundan Kumar, Kushagra Malik, Sheikh Abdul Rabbani, Nikhil Tengli</i>
	IACIT-166	A Survey On Machine Learning Techniques For Movie Recommendation System <i>Sushmita Nageshwar, Laxmi B Ranavare</i>
	IACIT-169	Sentiment Analysis On Twitter Data: A Study Of Methods Based On Negativity Or Positivity <i>Amit Malik, Ashish Yadav, Boby , Manju More</i>
	IACIT-170	Sentiment Analysis Using Machine Learning: A Survey <i>Pooja Mahaling, P.V Bhaskar Reddy</i>
	IACIT-171	A Diagnosis System Framework For The Time-Series Analysis Of The Terrorism Attacks Worldwide <i>Dharanija. G, B. Chandana Priya, B. Manasa Sai, G.V. Vishnu Vardhan Reddy, Sujatha. K</i>
	IACIT-174	Stock Price Prediction Using Time Series Analysis And Business Intelligence <i>Gaurav Priyadarshi, Avneet Ranjan, Sharath Kumar, Bipul Mohanta, A.Anand Shankar</i>

### Data Mining & Artificial Intelligence.

Session 1: Track 2 11:50am to 1:00pm  Basement Seminar Hall – 2 S.V Block	Paper ID	Title of the Paper
	IACIT-254	Text Summarization Using Ranking Algorithm <i>Aruna Kumara B, Smitha N S, Yashaswini Patil, Shilpa P, Sufiya</i>
	IACIT-260	Prediction Of Soil Quality Using Machine Learning Approach <i>Ramya R, Ranjitha D, Revathy T, P R Vijeth, Ranjitha U N</i>
	IACIT-265	User Centric Recommendation System For Location Promotion In Lbsns <i>Chidanand, Farooque Azam, Chaitanya, Deepanshu, Kiran Kumar</i>
	IACIT-268	Study On Intelligent Decision Making Platform In The Agricultural Production <i>Saiteja, A.Prasanth, Irshad Khan, Adarsha Bikram, Ambika B J</i>
	IACIT-269	Automated Traffic Density Control With Emergency Service System <i>pavan Kumar B N , raghavendra J, rakesh M,Laxmi B Ranavare</i>
	IACIT-274	Effect Of Kernel Learning In Unsupervised Learning For Clustering High Dimensional Databases <i>Esha Kashyap, S.R.Kannan</i>

### Data Mining & Artificial Intelligence.

Session 1: Track 3 11:50am to 1:00pm  Legal Studies Seminar Hall	Paper ID	Title of the Paper
	IACIT-347	Machine Learning Classifiers For Credit Card Fraud Detection: A Brief Survey <i>Vidyashree V, Akram Pasha</i>
	IACIT-348	Application Of Machine Learning In Employee Performance Prediction <i>Sandeep Sharma, Saurabh Singh, Rafsan Ali, Archana</i>
	IACIT-350	Importance Of Social Media Analytics During Elections: A Review <i>P. N. Jain, N. V. Alone</i>
	IACIT-357	Efficient Conversational AI Agent To Improve Rural And Urban Healthcare <i>Nischita N J, Mylara C Reddy</i>
	IACIT-358	Machine Learning Based Flower Recognition System

S.V Block		<i>Utkarsh Tiwari, Rohit Kumar Singh, Rohan Vijay Wargia, P Uttareshwar Vikasrao, Mallikarjun M Kodabagi</i>
	IACIT-367	Comparative Study Of Multiple Machine Learning Algorithms For Students' Performance Data For Job Placement In University <i>Athreya Shetty B, Akram Pasha, Amith Singh, Shreyas N I, Adithya R Hande</i>
<b>Mobile Computing and Cloud Computing and Security</b>		
Session 1: Track 4 11:50am to 1:00pm  7th Floor Seminar Hall S.V Block	Paper ID	Title of the Paper
	IACIT-163	Detection Of E-Banking Phishing Websites <i>N. Saivikas Reddy, Vinay Kumar M</i>
	IACIT-164	PLACEMENTO – An Android Based Project for the Automation of Placement and Training Department <i>Akash Srivastava, Annu Malik, Alisha Bhatt, Aprajita Kumari, Manju More</i>
	IACIT-165	New Approach to Product Recommendation System by Using Blog Data for E-Commerce Applications <i>G Kiran Prabhu, D Sai Kumar, Ayasya V Bulusu, E Poojitha, Raghavendra Reddy</i>
	IACIT-172	Campus Career Management System <i>A. Jesee, A. Mounika, Anupama, Anusha Roy, Basavaraj S H</i>
	IACIT-173	Comparative Study of Encrypation Algorithms for Emproved Security:Survey <i>Abdulrahman M.Zeyad, Gopal Krishna shyam</i>
	IACIT-178	Security In Cloud Computing: A Survey <i>Abhishek Gaur, Sohini Bhar, Gopal Krishna Shyam</i>
<b>Mobile Computing and Cloud Computing and Security</b>		
Session 1: Track 5 11:50am to 1:00pm  Library Seminar Hall Library Block	Paper ID	Title of the Paper
	IACIT-229	Mobile Charging On Coin Insertion <i>Mylara Reddy, Sai Charan, Akshay R, Badrinath N, Rakshith S N</i>
	IACIT-231	Preventing Privacy leakage of photo sharing on online social Networks <i>Rekha, Venkatesh Prasad</i>
	IACIT-232	Android Attendances System Using Wifi <i>Matle Venkata Anusha, Nagaveni M, Giraddi.R Satyaraddi, Anilkumar Ambore</i>
	IACIT-235	Secured Data Sharing in Clouds <i>Sowmya Sundari L K, Pallavi K R, P. Bhavya Shree, P. Lakshmi Viharika, R. Hari Chandana</i>
	IACIT-237	Private Web hosting for Confidential Data using Cloud <i>N. S. Nikhil, Nonika Sharma, N. Prashanth , M. Harini , Chaithra M H</i>
	IACIT-242	Information Gathering And Footprinting Framework For Penetration Testing Using Shell Script <i>Maniparthy M, Mallikarjun B, Gopichand D ,Raghavendra Reddy</i>
<b>Data Mining &amp; Artificial Intelligence.</b>		
Session 2: Track 1 2:00pm to 3:10pm  Basement Seminar Hall – 1	Paper ID	Title of the Paper
	IACIT-179	Analysis Of Security Threats Using Machine Learning And Cloud Computing Technology <i>Prajwal Kulkarni, Sneha Pattar, Gopal Krishna Shyam</i>
	IACIT-181	Comparative Study On Prediction Of Personality Of A Person Using Text <i>Susmita S. Kunde, A. U. Bapat</i>
	IACIT-184	A Novel Approach To Recommendation System By Using User Trust And Item Ratings <i>d Siva Kumar, borra L S Chaitanya Reddy, c Naveen Sai, g Nandini, raghavendra Reddy</i>
	IACIT-187	Bigdata Analytics Predicting Risk Of Readmissions Of Diabetic Patients <i>G. Amrutha Varshini, Priyanka, Nafisa.S, S.Sri Vishnupriya, Ambika B.J</i>
	IACIT-203	Monitoring Of Greenhouse Powered By Machine Learning And IOT: A

S.V Block		Survey <i>Dhanya N A, Dr. Kiran Kumari Patil</i>
	IACIT-204	Logistic Regression For Detection Of Bankruptcy <i>Sagar Kumar, Shubhajit Mukherjee, Shubham Agarwal, Ila Chandrakar</i>
<b>Data Mining &amp; Artificial Intelligence.</b>		
Session 2: Track 2 2:00pm to 3:10pm  Basement Seminar Hall – 2 S.V Block	Paper ID	Title of the Paper
	IACIT-277	Android Application On Plant Disease Identification Using Tensorflow <i>Naveen Chandra Gowda, Sunil Kumar, Subham Majumdar, Koneti Naga Abhishek, Parikshit Sarode</i>
	IACIT-281	A Survey On The Applications And Techniques Used In Bank Data Mining <i>N. B. Rao, V. R. Hulipalle</i>
	IACIT-303	Intelligent Traffic Management System. <i>Kishen. V, M. S. Sathvik Murthy, Mithilesh Kumar, Nimrita Koul</i>
	IACIT-304	Neosis-Diagnosing Tool <i>Vikas Madhava, Nishanth B, Mohammed Hashir, Mohammed Mazhar, Chaithra N</i>
	IACIT-306	Machine Learning Based Weather Prediction System <i>Ronika Surshetty, Satvik Sabharwal, Shreeya Agrawal, Somesh Yadav, Nimrita Koul</i>
	IACIT-308	Intelligent Blood Cell Classification Using Machine Learning Algorithm <i>Shwetha S Patil, Udaya Rani V</i>
	<b>Data Mining &amp; Artificial Intelligence.</b>	
Session 2: Track 3 2:00pm to 3:10pm  Legal Studies Seminar Hall S.V Block	Paper ID	Title of the Paper
	IACIT-368	Tracking Suicidal Tendency Using Twitter Data And Machine Learning Algorithms <i>Likitha Daiphule, Dr.Bhaskar Reddy,Avinash Savith, Apoorva T V, Kavya</i>
	IACIT-372	Multiple Machine Learning Classifiers For Student's Admission To University Prediction <i>Anil B, Akram Pasha, Aman, Aman Kumar Singh, Aditya Kumar Singh</i>
	IACIT-374	Smart Traffic Analysis Using Machine Learning <i>Shantala Devi Patil, Gopala Krishna Shyam, Abhishek K, Abhishek Md, Aditya Krishna K.V.S., Allam Swaraj</i>
	IACIT-378	Insights of Mathematics for Big Data <i>D N Punith Kumar, Akram Pasha</i>
	IACIT-380	Chatbot Using Google Dialog Flow <i>D.S.Nithin, R. H. Vishwanath</i>
	IACIT-381	Detection Of Liver Lesion Using ROBUST Machine Learning Technique <i>Sowmya Sundari L K, Nirmala S Gupta</i>
	<b>Mobile Computing and Cloud Computing and Security</b>	
	Title of the Paper	
Session 2: Track 4 2:00pm to 3:10pm  7th Floor Seminar Hall S.V Block	Paper ID	Design and Development of Legal Freelance Portal <i>Ambika S, V. Tejasree, A. Sai Praneeth, V. Ashish Kumar, Asha K</i>
	IACIT-202	Application-aware big-data de-duplication in cloud computing <i>Jagadeeshwari J, Joshitha Gunreddy, Harshitha H G, Harshitha R</i>
	IACIT-206	CYBER PATROL – A CYBER BULLYING SOLUTION <i>Akash Balachandar, Anusha D Kulkarni, Ashwini N Shetty</i>
	IACIT-208	An Efficient Cluster Analysis of Cyber Crime Records using R <i>Mir Abdul Samim Ansari, Gopal K. Shyam</i>
	IACIT-221	Web Based College Information Management System <i>Divya S, Rasika Chandrasekaran, Akshatha Patil, Anushree Patil</i>
	IACIT-228	Survey on Enhancement of One Time Password as a Service (OTPaaS) <i>Siddharth S. Gosavi, Gopal K Shyam</i>
	<b>Mobile Computing and Cloud Computing and Security</b>	
Session 2: Track 5	Paper ID	Title of the Paper
	IACIT-245	Data Security in Cloud Computing: A Survey

2:00pm to 3:10pm  Library Seminar Hall Library Block		<i>Shaziya Banu, Gopal K Shyam</i>
	IACIT-250	Dynamic SLA Management From A Cloud Consumer Perspective: Issues, Challenges And Next Steps <i>Sachin Kodagali, Gopal Kirshna Shyam</i>
	IACIT-271	Eatery Management System <i>Lakshmi S, Sharath Simha, Archana B H, Kishen Achar B R , Chaithra M H</i>
	IACIT-272	Approaches To Automated Detection Of Cyberbullying: A Survey <i>Ayesha Banu R, Gopal K Shyam</i>
	IACIT-301	Digital REVA – A Paper-free Security Solution <i>Alisha Bilquis, Anmol Itnal, Akash Rana, Prof. Bindushree D C</i>
	<b>Data Mining &amp; Artificial Intelligence.</b>	

Session 3: Track 1 3:10pm to 4:20pm  Basement Seminar Hall – 1 S.V Block	Paper ID	Title of the Paper
	IACIT-213	Cloud Based Home Automation System Using Artificial Intelligence-Google Assistant <i>Sunil Kumar B.S, Vanitha G.C, Veena S, Vishnuvardhan Reddy, Chaithra.N</i>
	IACIT-214	Autonomous Crop Irrigation System Using Artificial Intelligence <i>Savita Choudhary, Vipul Gaurav, Abhijeet Singh, Susmit Agarwal</i>
	IACIT-225	Email Spam Filtering Using Supervised Machine Learning Technique <i>Navya N C, Dr. Ashwinkumar</i>
	IACIT-238	Machine Learning Approach For Cancer Detection <i>Anooja Ali, Pooja G, Prajeela MP, Riddhi Rakesh, Tabassum Taj</i>
	IACIT-246	Fatigue Detection System Based On Eye Blinks Of Drivers <i>A Aravind, Aditya Agarwal, Ayush Jaiswal, Ayush Panjiyara, Mallikarjun Shastry P M</i>
	<b>Data Mining &amp; Artificial Intelligence.</b>	

Session 3: Track 2 3:10pm to 4:20pm  Basement Seminar Hall – 2 S.V Block	Paper ID	Title of the Paper
	IACIT-309	Newsrank: Ranking News Topics Based On Social Media Factors <i>Malathi Kulkarni, Vishwanath.R.Hulipalled</i>
	IACIT-310	Emotion Based Music Player <i>Deepak R, Venkatesh Prasad, Gowri Sai Prabha, Shravanthi R, Andrew Stephen</i>
	IACIT-313	Three Class Classification Technique To Predict Road Accident Severity <i>Ramesh M Chakrasali, Naganandini G</i>
	IACIT-314	Stock Price Prediction Using KNN And Linear Regression <i>Poornima S P, Priyanka C N, Reshma P, Suraj K Jaiswal, Surendra Babu K N</i>
	IACIT-326	Sentiment Analysis On Twitter <i>Lokesh Patidar, Raghavendra Nayaka P., Vaibhav Malviya, Ashwini, Varshitha TR</i>
	<b>Data Mining &amp; Artificial Intelligence.</b>	

Session 3: Track 3 3:10pm to 4:20pm  Legal Studies Seminar Hall S.V Block	Paper ID	Title of the Paper
	IACIT-385	Machine Learning Based Models Used For Sales Prediction In Retail Shops: A Survey <i>Surendra Babu K N, Mallikarjun M Kodabagi</i>
	IACIT-386	Machine Learning Methods For Heart Disease Prediction <i>Rashmi .G.O , Ashwinkumar .U.M</i>
	IACIT-393	Accuracy Of Classification Algorithms For Diabetes Prediction <i>Ambika Rani Subhash, Ashwinkumar UM</i>
	IACIT-394	Protein Network Alignment And Disease Prediction <i>Anooja Ali, Vishwanath R. Hulipalled, S. S. Patil</i>

Session 3: Track 4 3:10pm to 4:20pm	Paper ID	Title of the Paper
	IACIT-395	Adaptive K-Nearest Centroid Neighbor Classifier For Detecting Drifted Twitter Spam <i>Lalitha LA, Vishwanath R Hulipalled</i>

7th Floor Seminar Hall S.V Block	IACIT-399	Optimizing Random Forest To Detect Disease In Apple Leaf <i>Kamalalochana. S , Nirmala S Guptha</i>
	IACIT-402	Device contextual content publishing in Media & Publishing industry using Big Data Analytics on AWS <i>Girish. G, Prabhakar</i>
	IACIT-403	Kernel Induced Possibilistic Unsupervised Clustering Techniques in Analyzing Breast Cancer Database <i>S.R. Kannan, M. Siva, R. Devi, Mark Last, Ramathilagam</i>

**Mobile Computing and Cloud Computing and Security**

Session 3: Track 5 3:10pm to 4:20pm  Library Seminar Hall Library Block	Paper ID	Title of the Paper
	IACIT-317	Android Accessibility Service : Bane or Boon <i>Idris Shah Hyder, Prof. Nikhil S. Tengeli</i>
	IACIT-319	Blockchain Enabled E-Voting System <i>Darshak N, Gautham A N, Veera Sandeep, Dr. Gopal Krishna Shyam</i>
	IACIT-320	Dynamic Resource Adaptation In Cloud Computing A Contribution <i>jyoti Chalikar, gopal K Shyam</i>
	IACIT-369	Adfence <i>Sudarshan Reddy, M Gowtham, Tharun K, SK Shareef, Gopinath R</i>
	IACIT-373	Indian Sub-Continent Risk Game <i>Ashank Dsouza, Om Prakash, Nithesh Raghavan, Surekha Thota</i>

**Saturday, 11<sup>th</sup> May 2019**

**Internet of Things & Wireless Sensor Networks**

Session 4: Track 1 11:30am to 1:00pm  Basement Seminar Hall – 1 S.V Block	Paper ID	Title of the Paper
	IACIT-167	QoS Routing Based on Available Bandwidth for Mobile Ad hoc Network <i>Rajeev Kumar</i>
	IACIT-185	Study On Various TCP Variants of Reactive Routing Protocols with Their Performance Analysis <i>Shibani Shetty, Deeksha Kotian, Divya, Khatheeja Rukshana, Shifana Begum</i>
	IACIT-188	Smart Monitoring System for Swach Bharat <i>Piojeet Sharma, Pratik Singh, Prashant Rai</i>
	IACIT-194	Camouflage Surveillance Robot <i>Dinesh G P, Mohammed Haneef, Mohammed Junaid, Naveen Kumar, Kanaiya V K</i>
	IACIT-198	Prevention of Theft of Sandalwood trees using IOT and Arduino <i>Ketaki Vinod Patil, Chakka Sai Abhishek</i>
	IACIT-205	Emission Detection Using RFID Technology <i>Sathish G C, P. Viswa Teja, Pallavi R, Pavani , P. Vengal</i>
	IACIT-209	Effectiveness of Teaching and Learning CPU scheduling Algorithms: A Survey <i>Sudhir K Pandey, Gopal Krishna Shyam</i>
	IACIT-212	AWK: Arduino Wearable Keyboard <i>Alyina Mohsin, Anannya Roshan, Anisha Gupta, Rishabh Agarwal, Meenakshi Sundaram A</i>

**Internet of Things & Wireless Sensor Networks**

Session 4: Track 2 11:30am to 1:00pm	Paper ID	Title of the Paper
	IACIT-282	Smart Ordering System for fast-food Restaurants <i>Raghavendra Nayaka P, Abhishek M P, Shashank D, Sandeep B S, Sandesh Nayak</i>

Basement Seminar Hall – 2 S.V Block	IACIT-285	Design of Efficient Floating Point MAC Unit for AI Hardware-Survey Paper <i>Archana N.G, Prameela Kumari N</i>
	IACIT-289	Online Car Rental System <i>Gothe Karthik Srinivas , D. Shankar , Channa Keshava V ,Chiranth Gowda , Nirmala S Guptha</i>
	IACIT-296	Passive Infrared (PIR) Sensor for Safe Agriculture <i>A Ajil , S Riyaz , S Pallavi, Reema P, R L Nikhila A</i>
	IACIT-299	Relay Node Selection Algorithm for Energy Optimization in WSN <i>Chaithra N</i>
	IACIT-302	IoT based Smart Card Pollution and Traffic Control System <i>Dipu Saha ,Farooque Azam , Bipin Kumar, Faizan Abedin, Daryl Jose</i>
	IACIT-305	Smart Helmet using IoT <i>Aishwarya Babu, Anandita Kushwaha, Anu Rawat, KAparna, Nimrita Koul</i>
	IACIT-311	Inference of Gene Regulatory Networks for Prostate Cancer using Bayesian Networks with Feedback and FeedForward Loops <i>Nimrita Koul, Dr. Sunilkumar S. Manvi</i>
<b>Internet of Things &amp; Wireless Sensor Networks</b>		
Session 4: Track 3 11:30am to 1:00pm  Legal Studies Seminar Hall S.V Block	Paper ID	Title of the Paper
	IACIT-362	Illusion pin authentication using Zero knowledge protocol <i>Soubhagyalaxmi V Nerabench, Sanjana B, Shaik ajith, Siddalinga Navadagi</i>
	IACIT-363	Proactive Web Security <i>Venu S N , Shilpa N R, Krishna Badiger</i>
	IACIT-364	The Therapeutic Robots <i>ShilpaK.A, Twinkle P, Uma G.N, Vedashree C, Vedashree D</i>
	IACIT-366	Smart Device for Rectifying Air Quality and Respiratory Threats <i>Shashi Kumar S , Damini R, Hema K, Geetha B</i>
	IACIT-371	Automated Poultry Farming Observance System Using IOT <i>Vamsi Krishna M, Priyanka S Gowda, Sarika R, Surekha Thota</i>
	IACIT-382	Multi-Factor Authentication <i>Harish M, Mayur S, Tejesh R, Vishal Umrao, Prof. Shalini Tiwari</i>
	IACIT-387	Network Life Time Analysis of WSNs Using Particle Swarm Optimization <i>Priyanka M D, Mallikarjuna M</i>
	IACIT-388	StegCrypt (Encryption using Steganography) <i>P. Sai VenkataSrivastav, Guru Prashanth.R, Raunak.A, MadhuPriya, Naveen Chandra Gowda</i>
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	IACIT-239	Image processing and Controller Based Game Play Using Hand Gestures <i>Prahars R, R Durga Sai Eswar, Ramya V, Prof Shruthi G</i>
	IACIT-244	SMART TRAFFIC LIGHT <i>Hritik Yadav, Iranna GG, J Nimalesh, Kiran Kumar, Archana.B</i>
	IACIT-247	Reversible Data Hiding in Encrypted Images <i>Narendra P, N. Ganesh Kumar Reddy, N. Ramakrishna, O. Harikrishnareddy, Shashikala N</i>
	IACIT-252	Data Recovery from Encrypted Image and Recovering Image <i>Shiva kumar R Naik, Kshitij Yadav, Hariom Yadav, Niha C Gowda, Mounika</i>
	IACIT-257	Traffic Sign Detection and Recognition <i>Harshavardhan Anil Patil, Vijay Kumar Gupta, Ishaan Poddar,</i>

		<i>Nikhil Ranjan, Meenakshi Sundarm A.</i>
	IACIT-273	Detection of Diabetic Retinopathy using Image Processing <i>Mujeefa. M. Shaikh, Nadhiya S, Nandini Sriram, Nupur Choudhury, Tanuja K</i>

**Neural Networks & Deep Learning.**

Session 4: Track 5 11:30am to 1:00pm  Library Seminar Hall Library Block	Paper ID	Title of the Paper
	IACIT-190	Smart Blind Stick Using Artificial Intelligence <i>Shalini Tiwari, Pruthvi S, Pushyap Suraj Nihal, Ravin R Menon, S Samith Kumar</i>
	IACIT-223	YOLO Based Object Detection Using Drone <i>Shiva Kumar R Naik, Kushal A, Lakshmi Narayan S, Sreeraam V Chatrapathi, Sagar T</i>
	IACIT-263	Classification of mammograms using attention learning for localization of malignancy <i>Manaswini Nagaraj, Vignesh Prabhakar, Sailaja Thota</i>
	IACIT-275	Crime Detection In Surveillance Videos <i>Ashok Kumar J M, Arun Kumar C, Abishek B R, Thirumagal E</i>
	IACIT-280	Forest Fire Detection Using Convolutional Neural Networks <i>Disha Bhat, Gagana H, Dimple M K, Kavitha, Shruthi G</i>
	IACIT-312	Smart Door Lock using Face Recognition <i>Niketha Mohan Jamakhandi, Harshith M, Jagriti, Priyanka Bharti</i>
	IACIT-329	Traffic Management Using Convolution Neural Network <i>Gaurav Dhingra, Neha K R, Amruthashree R V, Eshitha D, Supreeth S</i>
	IACIT-360	Intrusion Detection system using Deep Neural Network and Regularization of Hyper parameters with add-on optimizer <i>R Sekhar, K Thangavel</i>

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	IACIT-216	IoT Based Advanced Smart Cultivation System <i>Tanmoy Chowbey, Mallikarjun M Kodabagi</i>
	IACIT-220	Implementation of IoT System using Block Chain with Authentication and Data Protection <i>Farheen Shaik, Satish G.C</i>
	IACIT-226	Body Sensor Networking <i>Poorvi Tyagi, Puja Kumari, PuttulKumari, Rakshitha KM, Ashwin Kumar UM</i>
	IACIT-233	Recognizing Mouse events through Head/Hand movement <i>Aruna Kumara B, T. Hashmitha, Swathi S.G, Swathi G, Vineeth P</i>
	IACIT-241	Implementation of IoT Framework Utilizing Blockchain with Validation and Information assurance with NFC Innovation. <i>TM. Yasmeen, Zaiba Sultana F, Zuha Fathima S.K, Basavaraj S. H</i>
	IACIT-253	Developments in Cognitive Internet of Things and its Application in Smart Cities <i>K. Sukumaran</i>

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	IACIT-316	Smart Irrigation using GSM Module and Microcontroller <i>Adarsh H J, Akshay A, Meghana R, Anju Thimmaiah M, Raghavendra Nayaka P</i>
	IACIT-321	Performance Study of IPFS over http(s) using the Multi-Cloud Platform <i>Ajil A, Shubham Kashyap, Rohith SS, Kumari Nisha Rani</i>
	IACIT-322	Cryptocurrency based 24/7 Online Food Ordering System

<b>Basement Seminar Hall – 2 S.V Block</b>		<i>M Prem Sampat, P. Sai Ganesh, Rajashekhar. C, P. Nithyananda, Prof. Surendrababu K N</i>
	IACIT-327	Smart Speed Limit Sign Board for Changing Weather Conditions <i>Abhishek Rai, Farooque Azam, Anshul Kumar, Abhinav Bajpai, Ankesh Gaurav</i>
	IACIT-331	Medibox –IoT Enabled Patient Assisting Device <i>Akshita D, Anupama Y, Annvin Vincent, Arya S</i>
	IACIT-343	Research and Survey Practice for sugarcane farming using Internet of Things (IOT) <i>Mr. Anilkumar Hulsure, Dr. P.V. Bhaskar Reddy</i>
<b>Digital Image Processing</b>		
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	IACIT-162	Robotic Arm Using Computer Vision <i>M Sandeep, Lavanya Shivgonda, Rajeswari M, Kaushik S, Nikhil S Tengli</i>
	IACIT-183	Click-n-Purchase: A Shopping guide with Image Retrieval based on Mobile Visual Search in Fashion Domain: A Survey <i>Nikhil. S. Tengli, Suvarna Nandyal</i>
	IACIT-193	Image Steganography Technique based on Canny Edge Detection and Hamming Code for Medical Data <i>Sheelavathy, Bhavana C, Bhoomika, Disha J, Hamsavani.R</i>
	IACIT-195	Face Recognition System Based on LBPH Algorithm <i>Abhishek Pratap Singh, SunilKumar S Manvi, Pratik Nimbal, Gopal Krishna Shayam</i>
	IACIT-199	Unfolding the dimensions of Brain-Computer Interface <i>Ayush Sharma, T N Anitha</i>
	IACIT-200	Mechanisation of Nuclei detection and segmentation:a leap in Medical Research <i>Besiahgari Dinesh, B Kavya, Besiahgari Sree Avinash, Sarvamangala D R</i>
<b>Digital Image Processing</b>		
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	IACIT-279	Leaf Disease Detection <i>Sowmya Sundari, Harshitha Rayapuram, Keerthana M, Kusuma Rathna M, Shalini A</i>
	IACIT-284	Life Logging Using Egocentric Perception <i>A. Anandakrishnan, A. Walia ,A. Jha, J. J. Pandya, C. V. Raj</i>
	IACIT-287	Automatic noise detection and reduction in images <i>Dhanush.S, G.UdayTeja, G.Srinidhi, N.MadhuBabu, Manjunath P C</i>
	IACIT-290	Design of High Speed Viterbi Decoder and Convolutional Encoder for SDR –Survey Paper <i>Reshma.R J, Raji.C</i>
	IACIT-295	Classification of land cover using Data Analytics for Hyperspectral Imaging <i>Sakshi Suman, Sanjana Suman, Santhosh J, Sham Vignesh, K Anitha</i>
	IACIT-352	Password processing scheme using enhanced Visual Cryptography and OCR in Hybrid Cloud Environment. <i>Ranjith.R, Supreeth S, Ramya R, Ganesh prasad.M, Chaitra Lakshmi L</i>
<b>Natural Language Processing &amp; Embedded Systems.</b>		
<b>Session 5: Track 5 2:00pm to 3:10pm</b>	Paper ID	Title of the Paper
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	IACIT-182	Gotripper Chatbot For Tourism

Library Seminar Hall Library Block		<i>Monalisha Bandyopadhyay, Mitali Sahoo, Mayur L Rangani, Jyoti K Mirji</i>
	IACIT-243	NLP Models behind RASA Stack <i>Ajith Shenoy, Akash Sharma, Akshay G.V, Akshay Rajan</i>
	IACIT-256	Laptop Assistant and Alert Notifier <i>Lalitha L A, Meghana A K, Meghana M P, Monisha R, Nayana R</i>
	IACIT-266	Emotion Recognition Using Opencv <i>P Dinesh Sai, Purvaja Varati, Rohan Singh, P.S.R.V Aditya, Prof. Ranjitha U.N</i>
	IACIT-370	E-mail Classification System: A Review and Research Challenges <i>Aruna Kumara B , Mallikarjun M Kodabagi</i>
	IACIT-375	Point-of-interest Recommendation in Location-based Social Networks <i>Aditi Sunil Deshpande, Keerthi Chandra P, Komala M, Madhushree T</i>

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	IACIT-270	BMTC E-pass Application <i>GunaShekar B, Darshan C, Ganesh Horamata B V,Basavaraddi Mulimani, Sarvamangala D R</i>
	IACIT-276	Tree Based Data Aggregation Algorithm In Wireless Sensor Networks <i>Aishwarya.R, Akarsha.D.P, Anupama.D.M, Anusha.P, Vani.K</i>
	IACIT-278	Android-based IoT Platform Environment and Permission Management <i>Menakarani. R, Dr. Udayarani. V</i>

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	IACIT-351	Security Enhancement Using Pre-Authentication and Proxy Re-Encryption <i>Sushma A , Sonisha S , SoumyaSree , Pooja M.S, Deekshitha G H</i>
	IACIT-353	Camouflage Surveillance Robot <i>Sudhindra O. S, Sughosh G, Sai Prakash Reddy, Yash Sokalla, Bindushree D. C</i>
	IACIT-354	Workspace Allocation and Management System with Realtim Feedback from IOT Sensors <i>Jayaprakash Nevara, Jyoti, Mirji</i>

#### **Digital Image Processing**

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	IACIT-201	Real Time Person Detection and Classification using YOLO <i>Tejas Rao C, Mohammed Zainuddin, Shrishail M Patil, Shashank G , Nimrita Koul</i>
	IACIT-207	Development of Image Annotation Tool by Using Region Grow Algorithm <i>Arunkumar.E, Gourish Malage, Sunilkumar S Manvi, Kiran Kumari Patil</i>
	IACIT-219	An approach to face detection and recognition using viola jones <i>Arvind Malge, Hardikkumar M. Dhaduk, Mallikarjuna Shastry P.M</i>

Seminar Hall S.V Block	IACIT-224	Face Recognition Based Attendance Management System Using DLIB <i>Chaitanya Krishna V B, Chethan Kumar A, Salman Ahmed, Sampath M, Bhaskar Reddy P V</i>
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	IACIT-355	REVA University Campus Tour using Virtual Reality Lipika Sreedharan, M. Sneha, Lisha Kamala K, Jennifer Susa Sen, Kiran M.
	IACIT-356	Implementation of Graphical Password System <i>Sukruth S, Supriya M N, Vinodh G, Vybhav Prasad S, Shilpa K A</i>
	IACIT-359	An Effective Authentication Scheme for Videos Using Invisible Watermark <i>Jayati Bhadra, M. Vinayaka Murthy, M.K. Banga</i>
	IACIT-376	Efficient Face Recognition System For Identifying Lost People <i>Bharath Darshan Balar, Chandana M, D S Kavya, Anush E, Vishwanath R Hulipalle</i>

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# **Keynote 1 Topic: New Frontiers in Cloud and Edge/Fog Computing for Big Data & Internet-of-Things Applications**

**Speaker** Dr. Rajkumar Buyya

**Date** 10 May 2019

**Time** 10:45am to 11:45am

**Venue** Basement Seminar Hall - 3, Swami Vivekananda Block.

## **Abstract:**

Computing is being transformed to a model consisting of services that are commoditized and delivered in a manner similar to utilities such as water, electricity, gas, and telephony. Several computing paradigms have promised to deliver this utility computing vision. Cloud computing paradigm has turned this vision of "computing utilities" into a reality. It offers infrastructure, platform, and software (application) as services, which are made available as subscription-based services in a pay-as-you-go model to consumers. Cloud application platforms need to offer (1) APIs and tools for rapid creation of elastic applications and (2) a runtime system for deployment of applications on geographically distributed computing infrastructure in a seamless manner.

The Internet of Things (IoT) paradigm enables seamless integration of cyber-and-physical worlds and opening up opportunities for creating new class of applications for domains such as smart cities. The emerging Fog computing paradigm extends Cloud computing model to edge resources for latency sensitive IoT applications. This keynote presentation will cover (a) 21st century vision of computing and identifies various IT paradigms promising to deliver the vision of computing utilities; (b) innovative architecture for creating elastic Clouds integrating edge resources and managed Clouds, (c) Aneka, a Cloud Application Platform, for rapid development of Cloud/Big Data applications and their deployment on private/public Clouds with resource provisioning driven by SLAs, (d) a novel FogBus software framework with Blockchain-based data-integrity management for facilitating end-to-end IoT-Fog(Edge)-Cloud integration for execution of sensitive IoT applications, (e) experimental results on deploying Cloud and Big Data/Internet-of-Things (IoT) applications in engineering, and health care, satellite image processing, and smart cities on elastic Clouds; and (f) directions for delivering our 21st century vision along with pathways for future research in Cloud and Fog computing.



Dr. Rajkumar Buyya is a Redmond Barry Distinguished Professor and Director of the Cloud Computing and Distributed Systems (CLOUDS) Laboratory at the University of Melbourne, Australia. He is also serving as the founding CEO of Manjrasoft, a spin-off company of the University, commercializing its innovations in Cloud Computing. He has authored over 650 publications and seven text books including "Mastering Cloud Computing" published by McGraw Hill, China Machine Press, and Morgan Kaufmann for Indian, Chinese and international markets respectively. Dr.Buyya is one of the highly cited authors in computer science and software engineering worldwide (h-index=125, g-index=271, 80,600+citations). He is named in the recent Clarivate Analytics' (formerly Thomson Reuters) Highly Cited Researchers and "World's Most Influential Scientific Minds" for three consecutive years since 2016. Dr. Buyya is recognized as Scopus Researcher of the Year 2017 with Excellence in Innovative Research Award by Elsevier for his outstanding contributions to Cloud computing. Software technologies for Grid, Cloud, and Fog computing developed under Dr.Buyya's leadership have gained rapid acceptance and are in use at several academic institutions and commercial enterprises in 40 countries around the world. Manjrasoft's Aneka Cloud technology developed under his leadership has received "Frost & Sullivan New Product Innovation Award". He served as founding Editor-in-Chief of the IEEE Transactions on Cloud Computing. He is currently serving as Editor-in-Chief of Software: Practice and Experience, a long standing journal in the field established ~50 years ago. For further information on Dr.Buyya, please visit his cyberhome: [www.buyya.com](http://www.buyya.com)

## Keynote 2 Topic: A Synthesizing Overview of Artificial Intelligence

<b>Speaker</b>	Prof. L.M Patnaik
<b>Date</b>	11 May 2019
<b>Time</b>	9:00am to 10:00pm
<b>Venue</b>	Basement Seminar Hall - 3, Swami Vivekananda Block

### Abstract:

Artificial Intelligence (AI) broadly deals with the art of creating machines that perform functions that require intelligence when performed by people. The 1956 summer Workshop that gave birth to Artificial Intelligence made the assertion that "Every aspect of learning or any other feature of intelligence can be so precisely described that a machine can be made to simulate it". After an initial burst of enthusiasm in the 1950s and 1960s, the charm for AI languished for decades. During the past few years, there have been striking advances in the field of machine learning especially in deep learning and AI is seen as one of the hottest developments in technology. Over the past several decades, AI involving automated perception, learning, reasoning, and decision making has become routine in our lives. Our smart phones understand our speech. Machine vision detects faces as we take pictures with our phones. AI provides millions of people with search results, and recommendations about movies. AI helps in real-time language translation. There are cars that drive themselves. AI helps physicians identify high risk patients. We will witness positive impacts on health care, education, transportation, commerce, and several other areas of our daily life, thanks to advances in AI. Research in machine learning, speech recognition, natural language processing, and computer vision, will further enhance the significance of AI. Several people have voiced their concern that AI systems could threaten our survival. Many argue that if the present level of advancement in AI continues, machines will become super-intelligent and be

difficult to control. The dominant perception is that these intelligent machines will steal our jobs, and will surpass human capabilities.

Though several components of AI have been of interest to the research community, machine learning has been of uppermost interest among all of them. Machine learning algorithms have good appetite for numeric computation and are thus ideal candidates for speedup through parallelization. In recent years there have been several attempts, both at academic and commercial level, to address this significant issue of great relevance to the HPC community.

This talk will present a brief and synthesizing overview of some of the above interesting developments in the field of AI



Prof. L.M. Patnaik obtained his Ph.D in 1978 in the area of Real-Time Systems, D.Sc. in 1989 in the areas of Computer Systems and Architectures, both from the Indian Institute of Science, Bangalore. During March 2008 – August 2011, he was the Vice Chancellor, Defence Institute of Advanced Technology, Deemed University, Pune. Currently he is an Honorary Professor with the Department of Electronic Systems Engineering, Indian Institute of Science, Bangalore, and INSA Senior Scientist and Adjunct Professor with the National Institute of Advanced Studies, Bangalore. Prior to this he was a Professor with the Department of Computer Science and Automation at the Indian Institute of Science, Bangalore. During the last 48 years of his long service, his teaching, research, and development interests have been in the areas of Parallel and Distributed Computing, Computer Architecture, CAD of VLSI Systems, High Performance Computing, Mobile Computing, Theoretical Computer Science, Real-Time Systems, Soft Computing, and Computational Neuroscience including Machine Cognition. In these areas, he has over 1150 publications in refereed International Journals and refereed International Conference Proceedings including 29 technical reports. He is a co-editor/co-author of twenty two books and has authored 13 chapters in other books. He has supervised over 30 Doctoral theses and over 160 Masters' theses in the above areas. In the areas of Parallel and Distributed Computing, and Soft Computing, he has been a Principal Investigator for a large number of Government-sponsored research projects and a Consultant to a few industries. One of his research papers in the area of adaptive genetic algorithms has been cited over 2700 times, a survey article on genetic algorithms over 2000 times, by Google Scholar; with an i-10 index of 114. He has served as the President of the Advanced Computing and Communications Society, and the Computational Intelligence Society of India. He is a

Distinguished Lecturer of the IEEE Region 10. He is a Distinguished Visitor of the IEEE Computer Society for the Asia-Pacific Region. As a recognition of his contributions in the areas of Electronics, Informatics, Telematics and Automation, he was awarded the Dr. Vikram Sarabhai Research Award in 1989; the Honorable Mention Award, Fourth CSI/IEEE International Symposium on VLSI Design, 1992; the Dr. Ramlal Wadhwa award for the year 1992 by the Institution of Electronics and Telecommunication Engineers, for his contributions during the last ten years in the fields of Electronics and Telecommunication; the Platinum Jubilee Lecture Award (Computer Science), Indian Science Congress, in 1994; the Samanta Chandrasekhar Award for the year 1994 by the Orissa Science Academy; the Certificate of Appreciation "For excellent service and dedication to the objectives of the IEEE Computer Society as a Distinguished Visitor", in 1995; the VASVIK Award in the Field of Electronic Sciences and Technology, Vividhlaxi Audyogik Samshodhan Vikas Kendra, 1996; the Hands for Indian IT Award for his contributions to the Indian IT (Information Technology) industry, in 1998; the "Distinguished Professional Engineer Award" by the Computer Engineering Division of the Institution of Engineers (India), in 1999; the IEEE Computer Society's "1999 Technical Achievement Award" for his contributions in the field of parallel, distributed, and soft computing, and high performance genetic algorithms; the Fourth Sir C V Raman Memorial Lecture Award in 2000; the First SVC Aiya Memorial Trust Award for Telecommunication Education, The Institution of Electronics and Telecommunication Engineers, Pune Centre, 2000; the Pandit Jawaharlal Nehru National Award for Engineering and Technology, in 1999; the Om Prakash Bhasin Award for contributions in the areas of Electronic and Information Technology for the year 2001; the FICCI Award for Innovation in Material Science, Applied Research and Space Science, 2001-2002; the IEEE Computer Society's Meritorious Service Award, 2002; Alumni Award for Excellence in Research for Engineering, the Indian Institute of Science, 2003, Distinguished Engineer Award of The Institution of Engineers(India), 2004; Goyal Prize for Applied Science, 2005; Honorary Fellow, the Indian Society for Technical Education, 2006; Indian Science Congress Association's Srinivasa Ramanujan Birth Centenary Award, 2007-2008; Biju Patnaik Award for Excellence in Science – 2007, in 2009; Top Management Consortium, Pune, 'Education – Defence Services Excellence Award – 2009', Mar 2010; Distinguished Alumnus Award, 2012, National Institute of Technology, Rourkela; Felicitation of International Neural Network Society India Chapter for outstanding contributions to Soft Computing, Dec 2014; M N Saha Memorial Award for Best Application Oriented Paper by the IETE in 2016; and Life Time Achievement Award, Computer Society of India, 2017. He is Fellow of the IEEE, and The World Academy of Sciences (TWAS), Trieste, Italy, The Computer Society of India, Indian National Science Academy, Indian Academy of Sciences, National Academy of Sciences, and Indian National Academy of Engineering. He is a Life Member of the VLSI Society of India, and Instrument Society of India, a founder Member of the Executive Committee of the Association for the Advancement of Fault-Tolerant and Autonomous Systems; a Fellow of the Institution of Electronics and Telecommunications Engineers, and the Institution of Engineers. His name appears in Asia's Who's Who of Men and Women of Achievement; Directory of Distinguished Computer Professionals of India. For over one hundred and fifty International Conferences, he has served as General Chair or Program Chair or Steering Committee Chair; most of them sponsored by the Institute of Electrical and Electronics Engineers (IEEE). He has delivered over 300 Keynote/Invited Talks at several International Conferences covering a broad range of topics in Computer Science and Engineering and IT. He has served on several significant committees of leading professional societies such as the IEEE, CSI, IETE and Institution of Engineers; review and policy committees of Government agencies such as the DST, DBT, MHRD, CSIR, DOS, UGC, AICTE, DRDO, DIT and UPSC; including on the Yash Pal committee to advise on Renovation and Rejuvenation of Higher Education. His participation in the reviews of several Engg Colleges in the states of Karnataka, Kerala, Andhra Pradesh, and

Maharastra, organised by the AICTE, UGC, NBA, and TEQIP has significantly improved the quality of technical education in the country. [ As Vice Chancellor of the Defence Institute of Advanced Technology, Deemed University, he was responsible for conducting large number of Doctoral, Masters', short and long courses, in the field of defence technologies for service officers from the Army, Air Force, Navy; DRDO scientists, officers from Indian Ordnance Factories and Director General of Quality Assurance, and service officers from several friendly foreign countries. He had initiated three new Post-Graduate Programmes of relevance to defence services including one on Cybersecurity, a new Centre on Nanotechnology for defence applications, and a collaborative programme with the Naval Post-Graduate School, California, USA. He has delivered several Invited lectures in USA, Canada, France, UK, Yugoslavia (erstwhile), Hungary, Switzerland, Australia, New Zealand, Hong Kong, Singapore, Malaysia, Sri Lanka and Japan. It needs to be emphasized that his training, as well as the research work done by him are entirely indigenously based. His contributions to Indian higher technical education system are outstanding. For publications and other details please visit, <http://www.lmpatnaik.in/>

## **Keynote 3 Topic: Artificial Intelligence for Society**

**Speaker** Dr. Ashish Ghosh

**Date** 11 May 2019

**Time** 1:45am to 2:45pm

**Venue** Basement Seminar Hall - 3, Swami Vivekananda Block

### **Abstract:**

Artificial Intelligence (AI) is the science of using computers to do things that traditionally required the human mind. It is a technology that will accelerate the digital transformation of industry, and will prove essential to the success of our digital economy in what is an increasingly connected world. A machine will most likely become a better doctor, a better chef, a better psychologist, a better psychologist, a better lawyer or even a better programmer. Improved performance of AI systems (driven by research breakthroughs, increased data availability, improved computing power and new architectures) are leading to applications that outperform human beings in certain domains. Computer vision, natural language processing, and data-driven prediction are notable areas of rapidly increasing AI capability. The increase in both the range and accuracy of the tasks AI systems can perform has led to both excitement and concern. Machines are now able to take on less-routine tasks, and this transition is occurring during an era in which many workers are already struggling. Effects on employment are the major areas of public concern and debate, but the potential societal benefits of AI extend more broadly. AI has the potential to drive changes in policy and practice across many domains, from natural resources to healthcare to the arts. It also raises new questions for ethical and legal practices of all orders of government, business, and civil society. By thinking about these effects early on, engaging diverse perspectives, and communicating new knowledge and insights responsibly and broadly, we will be better able to respond to the new challenges AI presents and take full advantage of the opportunities for human advancement and understanding.



Dr. Ashish Ghosh is a Professor & former Head of Machine Intelligence Unit and the In-charge of Center for Soft Computing Research at the Indian Statistical Institute, Kolkata. He received the B.E. degree in Electronics and Telecommunication from the Jadavpur University, Kolkata in 1987, and the M.Tech. And Ph.D. degrees in Computer Science from the Indian Statistical Institute, Kolkata in 1989 and 1993, respectively. He is a fellow of West Bengal Academy of Science and Technology. He received the prestigious and most coveted Young Scientists award in Engineering Sciences from the Indian National Science Academy in 1995; and in Computer Science from the Indian Science Congress Association in 1992. He has been selected as an Associate of the Indian Academy of Sciences, Bangalore in 1997.

He visited the Osaka Prefecture University, Japan with a Post-doctoral fellowship during October 1995 to March 1997; Hannan University, Japan as a Visiting Professor with fellowship from Japan Society for Promotion of Sciences (JSPS) during February-April, 2005. During May 1999 was at the Institute of Automation, Chinese Academy of Sciences, and Beijing with CIMPA (France) Fellowship. He was a Visiting Researcher at the National Research Center for Information Technology (GMD), St. Augustin, Germany during January-April, 2000, and at the Aachen University, Germany in September 2010 and May-June 2013 with an European Commission Fellowship. During October-December 2003 he was a Visiting Professor at the University of California, Los Angeles; and during December 2006-January 2007, April 2014 and July 2017 he was at the Computer Science Department of Yonsei University, Korea. He was a Visiting Professor at KMUTT, Thailand during March-April, 2016. His visits to University of Trento & University of Palermo (Italy), University of Porto, Portugal and Hong Kong Polytechnic University, Hong Kong were in connection with collaborative international projects. He also visited various Universities/Academic Institutes and delivered lectures in different countries including South Korea, Poland, Hong Kong, and The Netherlands.

His research interests include Data Science, Data mining and Big Data analysis, Neural and deep learning, Video, color, medical and remotely sensed image analysis, Pattern recognition and machine learning, Automatic target recognition, Natural computing, Soft computing, Computational intelligence and related topics. He has already published more than 250 research papers in internationally reputed journals and referred conferences, has edited 10 books, and is acting as a member of the editorial board/associate editor of various international

journals. He served in the capacity of Keynote Speaker, Plenary Speaker, General Chair, Program Chair, Tutorial Chair, and Organizing Chair of many international conferences.

He is a member of the founding team that established the National Center for Soft Computing Research at the Indian Statistical Institute, Kolkata in 2004 with funding from the Department of Science and Technology (DST), Govt. of India; acting as the Theme Coordinator of Data Science Research initiative of DST, India; Member of a committee on Cyber Security, Safety, Legal and Ethical Issues of the Artificial Intelligence initiatives of MeitY, New Delhi, Govt. of India; and Member of the Research Advisory Committee of Securities and Exchange Board of India, Mumbai, Govt. of India.

**DATA MINING**

**and**

**ARTIFICIAL**

**INTELLIGENCE**

## Retail Assortment Planning Using Data Science

**Kundan Kumar, Kushagra Malik, Sheikh Abdul Rabbani, Nikhil Tengli**

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**Abstract**— This project is based on providing solution to retail giants to address their current Assortment strategy and increase their profit. Assortment AI is an AI project under the trade name reMark which is a social analytical platform of Kigyan Techno Solutions that provides retail marketing solutions. The concept of the project is: Today majority of the giant retail companies are facing a lot of issues in their current assortment planning of their products. These include the total dump of products being 45%. This wrong assortment planning leads to products being out of stock which causes loss to businesses and major customer dissatisfaction, also this assortment planning requires a lot of manual strategies which are very costly and hence these assortment strategies then turn out to be costly, time taking, biased and working on mostly non relevant data. Due to the above factors the retail companies have understood that the current assortment planning strategies are not working and are only causing business loss and customer attrition. Hence there is a need of new assortment plan. The project that we are currently working on is building computerization between the gaps that arise in a retail market and so the project is an Artificial Intelligence block which will process the current situation and will build a proper assortment plan. This would then address various problems that the retail companies were facing and present them with proper assortment plan which would include unbiased assortment strategy, the dump would be reduced to less than 20%, increase the customer satisfaction and reduce the customer attrition.

**Keywords** — *Kigyan, data, attrition, retail, assortment, dump, strategy.*

## A Survey on Machine Learning Techniques for Movie Recommendation System

**Sushmita Nageshwar, Laxmi B Ranavare**

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**Abstract** — The big quantity of growth in facts accessible over the internet has generated the finest mission in finding beneficial statistics. As an outcome of the machine learning method consisting of a recommendation system is used this could recommend the whole thing from songs, movies, jokes, restaurants with rankings. That may efficaciously retrieve beneficial data from the web. The major consciousness of this paper, we implementing a Support Vector Machine (SVM), Neural Network Based Recommendation system, Content-based Collaborative filtering algorithm. The similarity is determined using for a Collaborative Filtering (CF) set of rules based totally on person similarity. In this, we have proposed to behavior a personalized movie recommendation by way of involving a person's nature. And this consists of an analysis of the outcomes and conclusions based totally at the simulations executed on the computer to assess how the algorithms work.

**Keywords** — *Recommendation system, SVM, Neural Network Based Recommendation, Content based collaborative*

## Sentiment Analysis on Twitter Data: A Study of methods based on negativity or positivity

**Amit Malik, Ashish Yadav, Boby, Manju More**

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**Abstract** — This venture explanation is the issue of idea for examination in twitter that is arranging tweets according to the thought verbalized in them: positive, negative or unprejudiced. The aim of this paper is to develop a functional classifier for accurate and automatic sentiment classification of an unknown tweet stream. Twitter is an online micro-blogging and social-networking platform which allows users to write short status updates. It is a rapidly developing administration with more than millions enlisted clients. Due to this large amount of usage all of us hope to achieve a reflection of public sentiment by analysing the sentiments expressed in the tweets. Analysing the public sentiment is important for many applications such as firms trying to find out the response of their products in the market, predicting political elections and predicting socio-economic phenomena like stock exchange.

**Keywords** — *NLP, Sentiment Analysis, Polarity, DMT, Support Vector Machine (SVM).*

## SENTIMENT ANALYSIS USING MACHINE LEARNING: A SURVEY

**Pooja Mahaling, P.V Bhaskar Reddy**

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**Abstract** — Social media is flooded with data that is generated by bloggers, committee, business, health, marketing, education, etc., in large amount. Extracting the data information from various fields like social media, marketing, reviews, conference publications and advertisement is done to perform sentiment analysis. These text data have some emotions hidden in it, and data analysing is carried out by natural language processing (NLP). NLP is application of artificial intelligence that help machine to read text by simulating the human capability to know language. Sentiment analysis is type of data mining that measures the opinion of the users or the customer or the blogger through the natural language processing, which can be utilized to extricate and dissect emotional data from web for the most part web based life. The main purpose of sentiment analysis is to classify emotions into positive, negative and neutral. The applications of sentiment analysis are in the financial market, area of reviews of consumer services and products to monitor customer sentiment and catch the trending topics. Sentiment analysis has challenges like multilingual sentiment analysis, emotion detection, and data sparsity from the different data by social media, marketing, emails, advertisement, movie review etc.

**Keywords** — *Sentiment analysis, natural language processing, artificialIntelligence*

## A Diagnosis System Framework for the Time-series analysis of the Terrorism attacks Worldwide

**Dharanija. G, B. Chandana Priya, B. Manasa Sai, G.V. Vishnu Vardhan Reddy, Sujatha. k**

School of Computing and Information Technology, REVA University, Bangalore, India

**Abstract** — Social media(twitter) is easily conveyed organization for the enrolled people that may fuse content, photos, chronicles and hyperlinks. Individuals post whereabouts, opinions and information to help or against social media. The most terrified subject is terrorist strikes happening far and wide. Terrorist exploits the web-based life to consistently impart utilizing code signs or to build their backhanded proximity. The words with the hash sign related with them are broke down, get the evaluation of the twitter posts. This paper displays a methodology for sentiment analysis on terrorist related posts and to deal with the slants with their geolocations. Machine learning procedures like KNN (K-Nearest Neighbor), Random Forest are connected and the information is prepared utilizing Exploratory Data Analysis. The results are looked at and exhibited.

**Keywords** — *Sentiment Analysis; Exploratory Data Analysis; KNN; Random Forest; Geolocations*

## STOCK PRICE PREDICTION USING TIME SERIES ANALYSIS AND BUSINESS INTELLIGENCE

**Gaurav Priyadarshi, Avneet Ranjan, Sharath Kumar, Bipul Mohanta, A. Anand Shankar**

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**Abstract** — Stock price prediction has always been a curious, interesting and complex topic in business studies. Stock market is very unreliable for forecasting since there are no major rules or algorithms to estimate or predict share price in the stock market. Several methods like Random Forest analysis, neural networks, time series analysis algorithms like ARIMA, statistical analysis, SVM and many more have been used to predict the stock price of shares in the stock market but not all of these implementations have been correctly identified as a consistent acceptable prediction tool. This paper presents a comparative study of time series analysis using Autoregressive Moving Average i.e. (ARIMA MODEL) and Tableau (a powerful business intelligence tool) to predict the closing index of Google Inc. This paper also presents a process to build stock price prediction model with the help of time series analysis i.e. (ARIMA).The model has been built with the help of R Programming and Tableau. With the upcoming of machine learning and neural networks many researchers are trying to predict the stock price of companies and the trend that it will follow in the near future because it affects the investors as well as the competitors that are present for that company in the market. The prediction of stock price can also be done using neural networks, SVM etc. But here time series analysis has been used because it is easy to implement and it gives better results for short term predictions. The results obtained by ARIMA model shows that it is one of the best methods for the analysis of time series data.

**Keywords** — *Stock market, forecasting, ARIMA Model, Business Intelligence*

## **Analysis of security threats using machine learning and cloud computing Technology**

**Prajwal Kulkarni, Sneha Pattar, Gopal Krishna Shyam**

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**Abstract** — Theatrical Events of fear like Terrorism based operations have been sighted everywhere throughout the world. This surveillance system analyses and speculates the possible suspects depending upon their conducts, records them into Watch-List, classifies them and stores their images in the Government cloud. Whenever the suspects in the Watch-List land at any Local camera resembling movement cams, Metro stations and Airports which are served by the government cloud, it recognizes them using facial recognition software. Instantly the framework alarms the experts and significant information is sent to the Military Intelligence. Based on the rundowns and photos gathered by the Military surveillance systems, they coordinate with the machine which utilizes facial acknowledgment programming to perceive the suspects in nearby reconnaissance cameras which are served by the administration cloud. The most problems faced is issues of privacy, there is a strict law for invading of public privacy just on suspicion without any proof. Hence its not possible for putting a surveillance on any individual. This machine resolves as it provides physical proofs of why that individual is being surveillance, moreover even common crimes within the city could be stopped by the local authority as facial recognition spots this individual in any camera. The application of this machine is limitless as terabytes of data is available in the local cloud just the accumulating this data and processing through proper channel is necessary

**Keywords** — Terrorism, machine learning, Local Cloud, Government Cloud

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## **Comparative Study on Prediction of Personality of a Person Using Text**

**Susmita S. Kunde, A. U. Bapat**

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**Abstract** — Every person is unique in its own way; every person has a different personality. Personality detection gives an idea of behaviour of the person or gives an idea of how a person will react in a particular situation. Study of the relationship between word-use and personality traits has been successful in giving insight into human behaviour. Questionnaires is the most commonly used methods in the earlier times to detect personality traits from text but is not that effective. Due to emergence in technology different new methods are now available to detect personality of a person automatically. This paper is a summarized study of various methods used to automatically predict personality of a person from its text. Beginning with various methods used in earlier times to the methods newly emerged, this paper is a detailed study of all the different types of methods which are used for personality prediction along with different personality prediction models.

**Keywords** — *Personality Prediction, Linguistics, LIWC, DISC, MBTI, Big Five Model.*

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# A NOVEL APPROACH TO RECOMMENDATION SYSTEM BY USING USER TRUST AND ITEM RATINGS

**D Siva Kumar, Borra L S Chaitanya Reddy, C Naveen Sai, G Nandini, Raghavendra Reddy**

School of Computing and Information Technology, REVA University, Bangalore, India.

**Abstract** — As of late, we have seen a twist of audit sites. It displays an incredible chance to share our point of view for different items we buy. In any case we face the data over-burdening issue. The most effective method to mine significant data from audits to comprehend a client's inclinations and make an exact suggestion is vital. Conventional recommender frameworks (RS) think about certain components. Furthermore, we consider a client's own nostalgic characteristics as well as mull over relational wistful impact. At that point Finally, we intertwine three variables client conclusion closeness, interpersonal sentimental impact, and thing's notoriety likeness into our recommender framework to make a precise rating forecast. We direct an act assessment of 3 wistful elements gathered from Yelp. The trial output demonstrate the assumption will clearly describe client inclinations, that help to enhance the proposal execution.

**Keywords** - *Recommendation System; Sentiment Analysis; Machine Learning; Social Networks.*

# BigData Analytics Predicting Risk Of Readmissions Of Diabetic Patients

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**Abstract** - Healthcare has huge impact on the society and also holds more importance in which analytics are applied to achieve accurate results about patients and to identify bottlenecks and to increase the business efficiency. Hospital readmissions are way too expensive and reflect the insufficiency in the healthcare system. Since readmission into hospitals has become unaffordable necessary measure needs to be taken to make them preventable [1] Readmissions rate decides the quality of treatment provided by the hospitals. Mostly readmissions are caused due to improper medication, early discharge, unmonitored discharge and poor care of hospital staff. In USA alone treatment of readmitted diabetics patients has exceeded over 250 million dollars per year. Advance identification of patient having high risk of readmission can allow the healthcare providers to perform additional investigations and also provides possibility to prevent readmissions. This method improves the quality of care and also reduces the medical expenses caused due to readmission .Number of patient visits, discharge order, type of admission were identified as the predicators of readmission. It was found that based on number of laboratory tests and discharge order both together predict whether the patient will be readmitted shortly after being discharged from the hospital (i.e. <30 days) or after a longer period of time (i.e. >30 days).These accurate results help the healthcare providers to improve care taken for diabetic patients.

**Keywords** - *Machine Learning, Analysis on Medical data, Data collection, Data preprocessing, Data labeling, Predictive modeling, Model training, Prediction.*

## Monitoring of Greenhouse Powered by Machine Learning and IOT: A Survey

**Dhanya N A, Kiran Kumari Patil**

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**Abstract** — The study helps to monitoring the greenhouse which focuses on major parts of irrigation system, enabling the farmers to utilize the technologies to collect information on temperature, humidity, soil moisture, water level , remote controlling of pump and intimation of intrusion by rodents as SMS to farmers using microcontroller various sensors and GSM. Sales allow the farmers to compare the cost values provided by the government and private markets and sell the crops where the farmer could gain profit. This paper concentrates to provide farmers to develop agriculture so that they could grow crops according to their farm conditions allowing in enhancing productivity and sales. The approach in carrying out the survey is to know about various technologies that have been implemented in monitoring the greenhouse and also to know the enhancements that could be made further. The survey has been made to analyze to what extent the farmers have been benefited or not by reviewing the various papers and to make an attempt to understand the levels of difficulties in monitoring greenhouse with exact temperature, humidity, soil moisture, water level and, aid farmers to perceive profit and also to resolve the same.

**Keywords** - Microcontroller, GSM, Temperature Sensor, Humidity Sensor, Soil Sensor, Zigbee Technology, Wireless Sensor network. Greenhouse monitoring.

## Logistic Regression for Detection of Bankruptcy

**Sagar Kumar, Shubhajit Mukherjee, Shubham Agarwal, Ila Chandrakar**

School of Computing and Information Technology, REVA University, Bangalore, India

**Abstract** — Bankruptcy is a legal procedure that claims a person or organization as a debtor. It is essential to ascertain the risk of bankruptcy at initial stages to prevent financial losses. In this perspective, different soft computing techniques can be employed to ascertain bankruptcy. This study proposes a bankruptcy prediction system to categorize the companies based on extent of risk. The prediction system acts as a decision support tool for detection of bankruptcy.

**Keywords** — Bankruptcy, soft computing, decision support tool

## Cloud Based Home Automation System Using Artificial Intelligence-Google Assistant

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**Abstract** - This paper is a proposition for Cloud-Based Home Automation Using Artificial Intelligence-Google Assistant, Home Computerization or Home-Automation. We have gone over a few home Computerization advances presented throughout the years, from Bluetooth controlled robotization to Expert-System. Though the Google-Home cost is around ₹7,999 (INR) with an extra cost of ₹3,999 (INR) for the Gadgets associated concerning Google-Home, the complete expense for the Structure will be ₹11,998 (INR). Apple-Home Kit alone is more costly than Google-Home, around ₹10,473 (INR) for an essential gadget. A savvy Gadget which is constrained by the Google-Assistant, Amazon-Echo, and Siri, which utilizes voice assistant, for giving directions will cost around ₹7,999 (INR). So also, A solitary Smart light is valued around ₹799 (INR) and this can be controlled both by Siri and Google-Assistant. To Transform home Computerization, we need to contribute, around ₹11,999 (INR) for a straightforward setup. Imagine a scenario in which we can Computerize (Automate) our home inside (the Smartphone cost is does excluded as it is possessed by everybody) ₹2,999 (INR) and can control up to 4 contraptions utilizing Google-Assistant, in this paper, we depict the Planning and actualizing of such a sort of framework. The procedure includes Natural language handling, NLP (voice direction) which is given through the Google-Assistant with the assistance of IFTTT (If-This-Then-That) versatile application, Adafruit Cloud and the Arduino IDE application the guidance is sent to the Microcontroller, thusly, controls the transfers associated with regarded contraptions as required, turning the gadget (relay) On or OFF directions given to the Google-Assistant. The Micro-controller utilizes Node-MCU (ESP8266) and the correspondence is built up by means of Wi-Fi (Internet).

**Keywords** - *Home Computerization, IFTTT(If-This-Than-That) Mobile-App, NodeMCU (ESP8266), Arduino IDE Application, Internet of Things (IoT), Google-Assistant, NLP-Voice Control, Smartphone.*

## Autonomous Crop Irrigation System using Artificial Intelligence

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**Abstract** — Agriculture plays a significant role in the economy and its contribution is based on measurable crop yield which is highly dependent upon irrigation. In a country like India, where agriculture is largely based on the unorganized sector, irrigation techniques and patterns followed are inefficient and often lead to unnecessary wastage of water. This calls for the need of a system which can provide an efficient and deployable solution. In this paper, we provide an Automatic Irrigation System based on Artificial Intelligence and Internet of Things, which can autonomously irrigate fields using soil moisture data. The system is based on prediction algorithms which make use of historic weather data to identify and predict rainfall patterns and climate changes; thereby creating an intelligent system which irrigates the crop fields selectively only when required as per the weather and real-time soil moisture conditions. The system has been tested in a controlled environment with an 80 percent accuracy, thus providing an efficient solution to the problem.

**Keywords** — *artificial intelligence, irrigation, internet of things, prediction algorithms, machine learning, water conservation.*

# Email Spam Filtering Using Supervised Machine Learning Technique

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**Abstract** — The Email Spam is known as direct mail. Email junk mail is the exercise of sending undesirable email messages, regularly with commercial enterprise content, in huge portions to an indiscriminate set of recipients. Spam is mounted at the internet due to the fact the transaction rate of digital communiqué is considerably much less than any trade shape of conversation. There are many spam filters using extraordinary strategies to identify the incoming message as spam, starting from white listing/ black listing, Bayesian analysis, key word matching, mail header evaluation, postage, law and content material scanning, etc. Widely used supervised tool analyzing strategies specifically C 4.5 Decision tree classifier, Multilayer Perceptron, Naive Bayes Classifier are used for mastering the competencies of unsolicited mail and the version is constructed via education with identified spam emails and ham emails.

**Keywords** — *Spam, Spam filter, Spammer, Mail header, Machine Learning, Classifier.*

## Machine Learning Approach for Cancer Detection

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**Abstract** — Machine Learning has several applications in Healthcare Domain. It provides more efficient, faster, smarter ways to detect and cure various diseases. Machine learning approaches are widely used for cancer diagnosis. In our approach we classify cancerous and noncancerous Oral Cancer images. We focused on image pre-processing, segmentation using image segmentation app in Matlab to improve the image quality and thereby improving the accuracy of classification and cancer detection. This approach using Support Vector Machines (SVM) obtained an accuracy of 89.2%. This method can be easily adopted for early cancer detection.

**Keywords** — *Machine Learning, Oral Cancer, Image Segmentation, Support Vector Machines.*

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## Fatigue Detection System Based on Eye Blinks of Drivers

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**Abstract** - In recent years, road accidents have increased significantly. One of the major reasons for the accidents as reported is driver fatigue. Therefore, there is a need for a system to measure the fatigue level of the driver and alert the driver when he/she feels drowsy to avoid accidents. So, in this paper we propose a system which comprises of a camera installed in the car dashboard. It will continuously monitor the blink pattern of driver and detect whether he is feeling drowsy or not. If the system finds the driver is feeling drowsy then an alert will be generated to avoid accident. This project attempts to contribute towards the exercise of analyzing driver behavior-based Eye Aspect Ratio (EAR) in order to reduce preventable road accidents.

**Keywords** - *Blink pattern, Camera, Car dashboard, Driver fatigue, Drowsy, Eye Aspect Ratio (EAR)*

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## Text Summarization Using Ranking Algorithm

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**Abstract** — The rapid growth of the online information and textual resources has made the text summarization more favourite domain to emphasise the importance and intention of textual information. Manual summarization of large source documents is arduous. Text summarization is automatic text summarization which shortens and condenses the original text document without any loss of original content in an efficient way. In recent years text summarization is one of the most favourite research domains in natural language processing and could attract more attention of NLP researchers. The intact relationship exists between text mining and text Summarization. In this work, topic of text mining and text summarization considered in the beginning. There after a model has been designed on some of the summarization approaches and essential parameters for extracting predominant sentences, found the main steps of the summarizing process, and the most significant extraction criteria are presented.

**Keywords-** *Text summarization, manual summarization, summary, text ranking*

## Prediction of Soil Quality using Machine Learning Approach

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**Abstract** — Our idea is to develop a machine learning model which is capable of predicting the quality of soil. Our idea focuses on Agriculture domain. Agriculture is the key to the economy and infrastructure of India. It plays a significant and most strategic role in the progress and financial growth of the nation. As the technology is rapidly advancing, extending it to agricultural domain yields most needed and promising results in achieving precision agriculture. The model we have designed is works towards achieving it. The model that analyzes the quality of soil thereby predicting the yield of the crop by considering various parameters. Crop yield prediction provides information for decision makers to maximize the crop productivity. Manually testing the quality of soil regularly is a complex task, so there is a need for automating the process that we are currently following, through an ML (Machine Learning) Model. Machine learning approach offers new contingency in the field of agriculture which is very much useful in soil dataset analysis and visualization of various parameters related to soil which would also help in decision making. It is crucial to design and implement a well-planned management system for monitoring various nutrients level by means of soil analysis procedure. In our model, various soil data sample from various regions are classified based on primary and secondary properties.

**Keywords** — *Machine Learning, Image Dataset, Soil Parameters, Image Processing, Supervised Learning, SVM Image Classifier.*

## USER CENTRIC RECOMMENDATION SYSTEM FOR LOCATION PROMOTION IN LBSNs

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**Abstract** — Aim of this paper is to propose a user-centric location recommendation service for the rapidly increasing LBSN (location-based social network). Our idea is to consider three important influencing factors i.e. client predilection, social impacts and distance influence for point-of-interest recommendations. Also, the influence factors i.e. client predilection, social impact are predicted via user-based collaborative filtering and friend-based collaborative filtering, we propose a technique to focus more on distance factor impacts because of the spatial clustering recorded in user visiting locations in LBSNs. Our research shows that the distance influence among locations plays a vital role in user check-in practices which is implemented by power law distribution. Likewise, we build an agglomerative location recommendation system, which combines client predilection to a location with social effect and distance influence. Our result shows that the proposed fusion framework performs better than the already proposed recommendation techniques.

**Keywords** — *LBSN, point-of-interest recommendation system, power-law.*

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## Study on Intelligent Decision-Making Platform in the Agricultural Production

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**Abstract:** By knowing the difficulties that present in the process of decision system that the present agriculture is not able to solve these problems in the agriculture production in this environment, so the technologies that the agent will do which is used in the field of agriculture is presented in this paper. The idea that how this intelligent decision system in the agriculture field also displayed, the design of this idea has also been constructed. So this system platform is developed by using java agent development framework to make the communication easy among agents with java language and also secure shell technology has been used for secured services SSH which is finally result to share the information of agriculture .The advantages of this process is to operate the crop cultivation, and also be the main role in environment protection and also used to change the economic condition to small scale.

**Keywords:** *Agriculture; Intelligent decision system*

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## AUTOMATED TRAFFIC DENSITY CONTROL WITH EMERGENCY SERVICE SYSTEM

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**Abstract** — Traffic jam is vehicles move in slower motion because there are more vehicles than the road capacity. This makes Traveling time longer and increases queuing and waiting time in traffic. Our proposed System control the traffic jam by survey the traffic density, efficiency and provide emergency services In this proposed project. A method is implemented for detecting the traffic congestion with the help of a monitoring system by using sensors providing emergency services, if any emergency situations like an accident, vehicle Malfunctioning happens. [1]The first module involves in the smart signal pole which scans the volume of the traffic, then as per the traffic volume signal timing will be increased or decreased accordingly. [2] The second module involves when traffic volume is increased to high an emergency alert message is triggered in a display, by seeing this alert message traveller can choose the alternate way for his destination. [3] Third module emergency condition like accidents panic button is provided by triggering this button manually an emergency message will be sent to Ambulance, Traffic Police, this helps to clear the traffic as early as possible.

**Keywords** — Smart signal pole, traffic congestion / traffic volume, panic button, emergency message

## Effect of Kernel Learning in Unsupervised Learning for Clustering High Dimensional Databases

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**Abstract** - This paper reviews the effectiveness of kernel learning in unsupervised data analysis using clustering. Cluster analysis is an explorative data analysis tool that assists in discovering hidden patterns or natural grouping and has many effective applications in various disciplines. The unison of kernel learning with the objective of unsupervised clustering algorithms facilitates in recognizing non linear structures in high dimensional data containing outliers with heavy noise. The recent kernel clustering methods considered in this paper are the kernelized versions of KMeans, Fuzzy C-Means, Possibilistic C-Means and Intuitionistic Fuzzy C-Means. Computational complexities in kernel based clustering algorithms are quiet prominent and our objective is to understand the performance gains while using kernels in clustering. Experimental studies of this paper substantiate that kernel based clustering algorithms yields significant improvements over their traditional counterparts.

**Keywords** - *Clustering, Partition clustering, Fuzzy clustering, Kernel learning, Data Analysis.*

## Android application on plant disease identification using Tensorflow

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**Abstract** — The changes in environment and climate leads to various diseases in plants. These diseases are sometimes difficult to identify without the right knowledge and expertise. The farmers and other plantation growers do not possess the expertise and resources to correctly identify the diseases of plants and their remedies. To handle this problem machine learning technology can be used, which can correctly identify the disease of the plants and display the remedies to the end user. Any new emerging disease can be added by proper botanist and their associations for the awareness of farmers. The machine learning system learns about the plant diseases from large datasets and gets trained to correctly identify new test cases given as an input by the farmers through the camera of their smartphones.

**Keywords** — *Android Application, Machine Learning, Prediction, Plant Diseases, TensorFlow, Image Dataset, Farmer*

## A survey on the Applications and Techniques used in Bank Data Mining

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**Abstract** — The Banking industry has undergone numerous changes within the manner they conduct the business and target modern technologies to contend the market. The industry has started realizing the importance of making the knowledge domain and its utilization for the advantages of the bank within the space of strategic progressing to survive within the competitive market. Within the era, the technologies area unit advanced and it facilitates to get, capture and store information area unit inflated staggeringly. The rise within the large volume of information as a vicinity of day to day operations and through different internal and external sources, forces information technology industries to use technologies like data processing to remodel information from information. Data processing technology provides the ability to access the correct information at the correct time from large volumes of information. Banking industries adopt the information mining technologies in numerous areas particularly in client segmentation and gain, predictions on Prices/Values of various investment merchandise, market business, dishonorable dealings detections, risk predictions, default prediction on evaluation. It is a valuable tool that identifies useful information from great deal of information. This study shows the importance of information mining technologies and its blessings within the banking and monetary sectors. This paper plans to exhibit the huge movements and latest DM executions in banking post 2013. By gathering and examining the patterns of research center, information assets, mechanical guides, and information systematic apparatuses, this paper adds to conveying important bits of knowledge as to the future improvements of both DM and the financial segment alongside a far reaching one stop reference table. Additionally, we recognize the key deterrents and present a rundown for every single invested individual that are confronting the difficulties of enormous information. This paper incorporates the general Data Mining system to defeat the contentions of bank database, misrepresentation recognition, database security and to make the safe exchanges from the database.

**Keywords** — *Data Mining, Banking Sector, Financial Fraud, Risk Management, Customer Relationship Management, Database security, Money Laundering, Decision Tree, CRISP-DM, Naïve Bayes, Neural Network, C5.0*

## Intelligent Traffic Management System

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**Abstract** — The importance of traffic signals is increasing owing to the drastic increase in population. Ensuring road safety is of high priority. In this project, we introduce an Intelligent Traffic Management System (ITMS) capable of managing traffic of varying densities, without the need of a traffic warden to physically monitor a particular intersection. This system is designed to retrieve the live traffic feed from a junction and process the same using the TensorFlow Object Detection API over OpenCV to detect the severity of the traffic based on the number of vehicles detected. Upon determining the number of vehicles, the corresponding signal, based on the traffic intensity is given. (More vehicles detected – Green light for longer duration and vice versa. ) Thus, this system dynamically adapts to the prevailing traffic conditions and grants the corresponding traffic light sequence for the required duration to maximize the flow of vehicular traffic. The system is designed to ensure smooth traffic flow by decreasing the wait period of vehicles at intersections and automates the process of controlling traffic signal.

**Keywords** — *Intelligent Traffic Management System, OpenCV, Tensorflow, Object Detection.*

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## Neosis-Diagnosing Tool

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**Abstract** — Overseeing regularly developing information in the wellbeing segment is a significant enormous issue. Existing framework comprises of an individual who deals with the information and overseeing in records, despite the fact that in numerous clinics which utilize top of the line advances the information is overseen in databases. Here this is overseen by an IT individual who is definitely not a therapeutic expert subsequently there is a probability of blunder while information goes from specialist to the individual; even a touch of mistake can have deadly outcomes. Our answer for this issue is building up the innovation to decrease all the above-expressed issues, disentangling information passage methodology for restorative experts and recovery of the specific information which is spared beforehand. The Impact done by building up this innovation is streamlining the working example and expanding the effectiveness in work and upgrading the time and diminishing the likelihood of mistake, prompting a stage which is quick and dependable

**Keywords** — *Diagnosing, Machine Learning, Data Management, Data Security, Digitization, Medication.*

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## Machine Learning Based Weather Prediction System

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**Abstract** — To forecast the situation of weather at a particular location is a vital application of machine learning. While traditionally this has been done by human experts by identifying patterns in data collected by various measuring instruments, in modern times the machine learning algorithms are used to crunch data and identify patterns which are used for predicting the weather parameters. In this work, we have used neural networks to analyze data from Dark Sky to forecast the climatic conditions.

**Keywords** — *Machine Learning, Weather Monitoring, Weather Prediction, Dark Sky*

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# Intelligent Blood Cell Classification Using Machine Learning Algorithm

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**Abstract** — This paper is an attempt to distinguish the blood cells into classify between White Blood Corpuscles (WBC) and Red Blood Corpuscles RBC to further this classification to find the sickle cell detection. The sub categorization of the red blood corpuscles is an important implementation in this paper for the disease classification. The sickle cell anemia is a disease based on RBCs oxygen carrying capability. In order to avoid the misclassification the RBC sub-categorization is carried out. The sickle cell anaemic cells are found using the machine learning algorithms. The convolutional Neural Network based implementation is carried out to find the sickle and non-sickle cell RBCs. The results obtained are found to be satisfactory.

**Keywords** — *Sickle Cell Anaemia, Convolutional Neural Network(CNN), Deep learning Methods*

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# NewsRank: Ranking News Topics based on Social Media Factors

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**Abstract** — All media sources , particularly the news media have educated the every day news. These days , internet based media like twitter gives us an immense amount of information that is created by client, which potentially contains news related information. These sources to be helpful we should remove undesirable information and concentrate just the information which is like the news media. Indeed, even though the unwanted information can still exist, so it is vital to give need to its usage. For this prioritization, information must be positioned utilizing three components. First Media Focus(MF) of the Topic which principally centers around both internet based life and news media, Next User Attention(UA) which depends on clients interests and User Interaction(UI), which is on how client responds to that specific topic. This is an Unsupervised framework NewsRank--- which find the news topics which is applicable in both news media and internet based life and after that ranking the news topics utilizing degree of three elements.

**Keywords** — *Media focus, Prioritization, Unsupervised, ,User Attention, User Interaction*

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# Emotion Based Music Player

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**Abstract** — The human face plays a very important role in expressing a person's emotion. Computer system with effective facial recognition algorithms can recognize the emotion and classify them into happy, sad, surprise, calm, angry etc. based on these classifications the songs are segregated and played to enhance the user's mood. The user can also use the buttons(emojis) to select his/her mood. Therefore, this application is developed to manage the content of the user, recognize the emotion of the person accurately and play a particular song based on the user's mood.

**Keywords** — *Haar Cascade Classifier, Emotion Recognition, Music Player, Machine Learning, Data Mining.*

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## Three Class Classification Technique To Predict Road Accident Severity

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**Abstract** — In recent years, road accidents are becoming more and more due to the larger growth in population. The growth of population and the increase in number of vehicles has led to a traffic congestion and sometimes may results in accidents. There are many factors that may lead to the road accidents and those maybe the driver's carelessness, drunk and drive, road conditions etc. Using the technology, necessary measures can be taken in order to predict the accidents at prior and to prevent the occurrence of accidents. In this research paper we use Gretl tool to identify the factors that are significantly contributing to the accidents, applied the logistic regression classification technique to build the machine learning model in order to predict the accident severity using the predictors like number of vehicles involved, road conditions, weather conditions, light conditions etc. Here we consider the accident severity as a dependent variable which is of three classes that is slight, serious and fatal. The main objective of this paper is that the accident has already occurred, in which we are predicting the severity of that accident.

**Keywords** — *AccidentSeverity, Predictions, LogisticRegression, Gretl, Tableau*

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## Stock Price Prediction using KNN and Linear Regression

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**Abstract** — Machine learning is a method of data analysis that automates analytical model building. It is a branch of artificial intelligence based on the idea that systems can learn from data, identify patterns and make decisions with minimal human intervention. With the ever increasing amounts of data becoming available there is good reason to believe that smart data analysis will become even more pervasive as a necessary ingredient for technological progress. It is an important challenge for the people who invest their money to forecast the daily stock prices, which helps them to put money into stock market with credence by taking risks and also variations into considerations. In this paper, we are going to apply KNN method and linear regression for predicting the stocks. The performance of linear Regression model on the selected data set is better when compared to KNN algorithm technique. The stock holders can invest confidently based on the results obtained from the model.

**Keywords** — *Prices of stock, K- Nearest Neighbour, Linear Regression, Machine learning.*

## Sentiment Analysis on Twitter

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**Abstract** — Twitter is an online miniaturized scale blogging and person to person communication stage which enables clients to compose short notices of most extreme length 140 characters (280 characters for confirmed records). This task tends to the issue of conclusion investigation in twitter; that is ordering tweets as indicated by the notion communicated in them: positive, negative or nonpartisan. It is a quickly growing administration with more than 500 million enlisted clients - out of which 330 million are dynamic clients and half of them sign on twitter once a day - producing almost 500 million tweets for each day. Because of this huge measure of use we would like to accomplish an impression of open assessment by breaking down the conclusions communicated in the tweets. Investigating the open slant is vital for some applications, for example, firms endeavouring to discover the reaction of their items in the market, foreseeing political races and anticipating financial wonders like stock trade.

**Keywords-** Social Network, Sentiment Analysis, Big Data Applications

## Machine Learning Classifiers for Credit Card Fraud Detection: A Brief Survey

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**Abstract** — Utilization of credit cards encourages individuals to buy products online via Internet. Individuals tend to do much of purchasing online or offline by utilizing the credit card facility provided by the bankers to their customers. Credit cards have turned out to be most prominent facility available to the people around the globe to encourage paperless trades at an enormous speed. Whenever any such trade happens in exchanges or net marketing by using paperless framework, it is subjected under high risk of fraudulent transactions due to many pitfalls in the security system of the usage of credit cards on the networks. This paper presents a brief survey of important and basic linear and non-linear machine learning algorithms that are focused to predict the fraudulent transactions by studying the patterns present in the credit card transactional datasets. The authors provide the methodology of Random forest, Support vector machine (SVM) and Artificial Neural Network (ANN) used to accurately classify whether the new credit card transaction is illegal or not.

**Keywords** — *Credit Card Fraud Detection, Random Forest, Support Vector Machine, Artificial Neural Netowrok*

# Application of Machine Learning in Employee Performance Prediction

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**Abstract** - In emerging developing countries such as India, companies heavily rely on their human workforce for services. That is why employee performance management at the individual level is must and the business case for implementing a system to measure and improve employee performance should be strong. The concept of the project is: Today majority of the giant retail companies are facing a lot of issues in their current assessment planning of their employees. This wrong assessment planning leads to employees not being used to the fullest potential which causes loss to businesses and major capital loss in man hours, also this assessment planning requires a lot of manual strategies which are very costly and hence these assessment strategies then turn out to be costly, time taking, biased and working on mostly non relevant data. We used the Machine learning classification technique for the extraction of knowledge significant for predicting employee performance using a .csv file sourced from (INX Future Inc.). Decision tree is the main Machine learning tool used to build the classification model, where several classification rules are generated. Results show that employee performance was highly affected by Years Since Last Promotion Emp Last Salary Hike Percent Emp Environment Satisfaction. This paper proposes a prediction model for employee performance analysis that enables the company to know more about the employees and what factor should the company tell the employees to focus on more so that they get better efficiency and they shold drop the factors which are least effecting.

**Keywords** - *Employee Performance Analysis, SVM, Machine Learning, Algorithm K-NN algorithm, random forest.*

## Importance of Social Media Analytics during elections: A review

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**Abstract** — The progress of 21<sup>st</sup> century can barely be anticipated without the indication of the part of social media in it. It wouldn't be overstating to say that social media is ubiquitously present in all spheres of life, be it education, health care, business, disaster management, politics, tourism industry and of course the use of media sharing and entertainment needs no mention. In the wake of all such convenience provided by the social media, it too, does have a darker side to cast. Misuse of social media, the other side of the coin, also needs to be accounted. In the light of this and more so because of the upcoming Lok Sabha elections in India, the authors of this report feel an urge to address the current status of knowledge, the research community possess regarding the use of social media during election. The paper discusses the basics of Social Media Analytics i.e., from its evolution and framework to tool and techniques and also some applications in brief. Finally, several studies on social media analytics during elections have been described. It is sought to contemplate the degree to which the result of an election can be predicted, public opinions be altered or its usefulness in campaigning for an election. Apart from this, the authors also hope that this study will be helpful for other researchers to analyse the social media data and yield productive outcomes that contribute to the development of society, government and the nation.

**Keywords** — *Social Media Analytics, Political science, Elections, Social media.*

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## Efficient Conversational AI Agent To Improve Rural and Urban Healthcare

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**Abstract** — Conversational AI agents are software programs which works exactly like humans, they interpret the users and accordingly react to the inputs given by them. These agents are built considering the medical interventions required to improve the overall health of the society. The AI agent designed acts intelligently during the process of the interaction between the humans and itself. It allows the user to use the interface by asking interactive questions then it processes them and responds relatively. Conversational agents are not only web based but they can also be used on other platforms like mobile phone or any other mobile devices. Despite all these a user shall be satisfied if and only if the software is easy to use and obtains the exact results with all of the queries being answered. The main concern with this model is to give that ease to the user to interact with the agent thus solving the queries related to the symptoms suffered by the patients and hence predicting the disease at an early stage by maintaining the accuracy. There are around 100000 diseases in the world according to WHO. Most of their symptoms overlap as well hence by using this agent its possible by it to think insightfully and predict the early symptoms of the disease. In this paper we have designed a user interface and this interacts with the user to take the necessary inputs. This data is fed to the advanced Natural Language Understanding (NLU) to provide the personalized prediction based on the user interaction. The predictions done by the model uses the classification algorithms of Machine Learning. The accuracy of each of these algorithms varies. Therefore instead of considering only one algorithm and hoping it gives the best accuracy, we can use the Ensemble learning method to improve the overall prediction rate. This method gives better predictive indications as it combines many models results thereby improving the overall precision. Here we train our model using various algorithms and ensemble them to get the final results based on the technique of voting. This paper presents a front-end interface for common man using HTML and Angular JS, NLU for text pre-processing using Tensorflow method and ML model as a classifier, for the prediction which uses various machine learning algorithms like SVM, Decision Tree, Random forest etc and combines them all in a majority voting ensemble for balanced results. Therefore this model interacts with any patients be it from the rural or the urban and based on their symptoms predicts and ranks the most probable disease accurately and reliably.

**Keywords** — *Conversational Agent, Artificial Intelligence, SVM, Decision Tree, Random Forest, Ensemble Learning, TensorFlow word embedding*

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## Machine Learning Based Flower Recognition System

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**Abstract** - Automatic flower plucking systems for smart agriculture are being studied for many years to support flower harvesting. Such systems require flower recognition task to be integrated as part of the system. This paper presents an approach for classification of flowers using a machine learning algorithm. The method categorizes flowers into different species with the help of convolutional neural networks and deep learning techniques. The system uses a pre-trained CNN model to improve the accuracy rate. Concepts such as Feedforward, back-propagation and transfer learning are used to create the neural network model. Different hyper-parameter values have been tested on the model which provides maximum accuracy of 85.0 percentage on the testing dataset. The result is visualized in the form of bar-plots which provides the top 5 predictions of flower species for the given input image of a flower.

**Keywords** — *Image Recognition, Machine learning, CNN, Feedforward.*

## Comparative Study of Multiple Machine Learning Algorithms for Students' Performance Data for Job Placement in University

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**Abstract** — In the era of data evolution, many organizations have taken the lead in storing the data in huge data repositories. Analysis of data comes with several challenges since the time the data is captured till the insights are inferred from the data. Accentuating the accuracy of data analysis is of paramount importance as many critical decisions are totally dependent on the outcomes of the analysis. Machine learning has been found as the most effective and most preferred tool in the literature for inmemory data analytics. Universities mostly collect the statistical data related to the students that is only either used quantitatively or sparsely analyzed to gain the insights that could be useful for the authorities to enhance the percentage of placements in campus drives held through early analysis of such data accurately. The work proposed in this paper formulates the problem of predicting the likelihood of a student getting placed in a company as a binary classification problem. Then it makes an effort to train and perform the empirical study of following multiple machine learning algorithms with the placement data; Logistic Regression, Naïve Bayes, Support Vector Machine, K-Nearest Neighbor and Decision Tree. The machine learning classification models are built to predict the probabilities of a student getting placed in a company based on the student's academic scores, achievements, work experience (internship), and many other relevant features. Such an analysis helps the university authorities to dynamically create plans to enhance the unlikely students to be placed in a company participating in the campus recruitment held in the university. To improve these models and to avoid the models from overfitting to the training data, strategies like K-Fold cross-validation is applied for various values of k. The machine learning models selected are also compared for its efficiency by employing the supervised and unsupervised feature extraction techniques such as PCA and LDA. The Decision Tree model with K as 10 for cross-validation and PCA has outperformed all the other models producing the accuracy of 72.83% with satisfactory support and recall during experimentation. The application focuses on the targeted group of students, to eventually improve the probability of students getting placed during campus recruitment drives held in the university.

**Keywords** — *Data Mining, Data Analytics, Classification, Machine Learning, K-Fold Cross Validation, PCA, LDA*

## Tracking Suicidal Tendency Using Twitter Data And Machine Learning Algorithms

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**Abstract** - Social media analytics has a major part in a person's life in this scenario. It is used to obtain the thoughts and opinion, sentiments of People. In this world people are comfortable sharing their thoughts and feelings effectively on social media rather than sharing their happiness or problems to their friends, parents or siblings'. Cerebral health indicators, with depression, schizophrenia and nervousness, leads to high risk of people obligating to suicide. Digital knowledge plays a major role to find suicidal tendency of people and to help them out. The study or research about finding the number of people who have suicidal tendency or not was carried over by many universities where they collected the data from twitter or any health organizations. Twitter data is the most easily available data when compared to Facebook or any other social media site. These observations help us to determine the percentage of people having suicidal tendency or not by many processes which includes data preprocessing, data augmentation, testing and training, and final result representation. We use machine learning concepts. Sentiment Analysis or opinion mining is used. There are many reasons for suicides across the world, using this digital or social data and with the help of machine learning we could also differentiate between the group of people who actually are depressed or people tweeting jokes, songs etc.

**Keywords** — *Twitter API, Bag Of Words, sentiment analysis, Natural Language Processing.*

# Multiple Machine Learning Classifiers for Student's Admission to University Prediction

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**Abstract** — Data is the most important asset for any organization which is further processed to produce useful information. Machine Learning and Big Data techniques are widely used for industrial sectors to generate useful patterns helpful for earning more profits and expand businesses. From the past few years, a lot of research works have been done by using Big Data techniques on educational data for improvement in Education System. Machine Learning and Big Data can be useful for predicting the students' admission, performance of teaching, performance of a student, identifying the group of students of similar behaviour. However, the manual process of record checking is time consuming, tedious, and error prone; due to the inherent volume and complexity of data. In this study, the combination of linear and non-linear machine learning algorithms; Logistic Regression, Decision Tree, k-NN, and Naïve Bayes have been chosen to perform prediction of the target class for an unseen observation by polling. As the models built in this work are predicting the likelihood of a student taking up the admission into any university based on the student data collected by any marketing agency, the combined models are collectively called as the Admission Predictor. The administrative officials of any academic institution can use this kind of an application to explore and analyse the patterns that are affecting the student admission and come up with enhanced strategies to improve admission. Such an application not only plays a vital role in administration, but also help the management in reformulating the marketing criteria for overall development of academic institution.

**Keywords** — *Data Mining, Data Analytics, Classification, Machine Learning, K-Fold Cross Validation, PCA, LDA*

## Smart Traffic Analysis Using Machine Learning

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**Abstract** — Congestion is costly as well as annoying. India is the second largest road network in the world. Out of the total stretch of 5.4 million km of road network, almost 97,991 km is covered by national highways. The major cause leading to traffic congestion is the high number of vehicle which was caused by the population and the development of economy[1]. Typical urban residents spend more than ten hours a week driving of which (one to three hours) occurs in congested situation. In smart city roads would be equipped with the sensors for analyzing the traffic flow and also there are few traffic analysis / prediction methods use neural network and other prediction models which are not so efficient and suitable for many real world application[1]. So, here in this paper solution for traffic analysis using random forest algorithm is being proposed which would select only part of data for analyze like two third of entire data and predict the traffic congestion of specific path and notifying well in advance the vehicles intending to move to move on that specific path. Thus accurate traffic flow information help road users for fast and safe transporting.

**Keywords** — *Machine Learning, Traffic analysis, Styling, Random Forest*

## Insights of Mathematics for Big Data

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**Abstract**— Computer Science can be considered as one of the extensions made to the pure mathematical sciences that exhibit the design and development of many mathematical models to solve various engineering problems. Data storage and data processing are the two major operations that are primarily focused by any computational model while solving a problem. Mathematical modelling has been helped in producing the various computational models across several problems that are found in the field of computer science. Among many problems that are found in the area of computer science, data science and big data have recently geared up to solve many business oriented problems that are purely based on data analytics to enhance the profit by taking critical business decisions. Data Scientists and mathematicians are found to have a skeptical understanding or too little collaboration either in knowing the mathematical concepts behind big data technologies, or too little knowledge of applications of mathematical concepts in applications of big data, respectively. Therefore, in this paper, an effort is made to bring out the major mathematical concepts that have contributed in fueling the solutions for big data problems. The authors hypothesize that the work proposed in this paper would benefit any data scientist or a mathematician to clearly understand the bridge between the math and its application in big data analytics. The authors identify the mathematical concepts and their roles played while solving various tasks that are encountered in the domains of big data. Further, such an endeavor is expected to open up many opportunities for both mathematicians and big data professionals to work collaboratively, while encouraging and contributing in enhancing interdisciplinary research across many domains of engineering.

**Keywords**—Big Data, Data Analytics, PCA, SVD, Laplacian Graph, Eigen values, Eigen Vectors, Linear Algebra

## ChatBot Using Google Dialog Flow

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**Abstract** — Humans are constantly fascinated with auto-operating AI-driven gadgets. The latest trend that is catching the eye of the majority of the tech industry is chatbots. And with so much research and advancement in the field, the programming is winding up more human-like, on top of being automated. The blend of immediate response reaction and consistent connectivity makes them an engaging change to the web applications trend. A chatbot (sometimes referred to as a chatterbot) is a computer program that attempts to simulate the conversation or "chatter" of a human being via text or voice interactions. A user can ask a chatbot a question or make a command, and the chatbot responds or performs the requested action. This work is about implementing a chatbot for education institutions, primarily on mobile and gadgets using google dialog flow. This work helps student enrolment's and to know more about the university and their offerings. This automatically makes instant messaging their preferred channel of communication, even when it comes to seeking support with an issue, or information about a program they would like to join. The average preference for instant messaging makes it highly beneficial for universities and colleges to create a chatbot to boost interest and enrolments in their course

**Keywords** — Agents, Chatbot, Dialogflow, Entities, Intents, Webhook

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## Detection of Liver Lesion using ROBUST Machine Learning Technique

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**Abstract** — In the present era, Computer Aided Diagnosis (CAD) is very useful for detection of liver tumor. This type of study and categorization system can moderate unnecessary biopsy. The proposed method for detection of liver cancer clusters in liver images using Gabor features and shape features. These regions are categorized by SVM classifier using the most prevailing features which are extracted from above features. In our project we have proposed a systematic approach of analyzing a liver under cancer positive environment. We have proposed a technique for tumor identification and segmentation using image smoothing and refining methods. When we use CT images for detection of liver tumor manual interaction is not necessary, since it works automatically. The projected method need to learn few model parameters such as tumor part, non-tumor part and segment liver regions. The complete system is divided into training part and testing part respectively and SVM is the core for this system. The input liver image undergoes for preprocessing step and image segmentation. Preprocessing includes many steps like resizing of an image, improve the clarity of the image, conversion form colored image in to gray scale. After this necessary features are collected from the resulting image. These collected features are then fed to the SVM for training. These collected features are compared with examination results with the available trained features by the SVM classifier which used RBF kernel. Depending on the comparison result, the classifier gives the result.

**Keywords**—SVM, RBF kernel

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## Machine Learning based Models used for Sales Prediction in Retail Shops: A Survey

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**Abstract** — Globally retail industries are growing day by day, because retail industries give more profit in less time duration. In 2017 USD 23,460 billion was the value of global retail industry, it is expected to increase 5.3% during the forecast period (2018-2023) reaching to USD 31,880.8 by 2023. Every business revolves around one word – Profit! Every business man wants to increase the profit of his business, no one wants to loose. The best way to increase the profit is by extracting knowledge about the business and transforming that knowledge into right predictions. In retail sales business, prediction of future sales is very much essential to improve the business operation and to increase profit. Manually analysing large amount of data for predicting future sales may lead to less accurate results. Statistical techniques were used initially to forecast future sales, later Data mining techniques were inculcated into the process of prediction. Only Data mining techniques were not sufficient to accurately predict the sales, so Artificial Intelligence (AI) domain is chosen by software professionals for prediction. Machine Learning (ML) is an application of AI and Deep Learning (DL) is an upgradation of ML especially Artificial Neural Network (ANN). Various ML and DL prediction models are gaining more attention in recent days. The models can be chosen based on the type of data that is being analysed and the response time of prediction models. This paper provides review of various prediction models used for sales prediction in retail industries based on data features and models.

**Keywords** — *Sales prediction model, Deep learning, Machine learning, Marketing, Regression classification*

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## MACHINE LEARNING METHODS FOR HEART DISEASE PREDICTION

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**Abstract** — Machine learning is utilized to empower a program to analyze information, understand correlations and make utilization of bits of knowledge to take care of issues or potentially enhance information and for prediction. The American Heart Association Statistics 2016 Report shows that coronary illness is the main source of death for people, responsible for 1 in every 4 deaths. Machine learning algorithms play a very important role in medical area. We use machine learning to understand, predict, and prevent cardiovascular disease using numeric data. The end goal is to produce an approved machine learning application in healthcare. In an effort to refine the search for a useful and accurate method with the dataset, the results of several algorithms will be compared. The front-runners will be analyzed and used to develop a unique, higher-accuracy method. Machine learning algorithms including Logistic Regression, Naïve Bayes, Decision tree(CART). We use ensemble learning for better accuracy which includes algorithms like Random Forest, XGBoost, Extra trees classifier. Also, our work adds to the present literature by giving a far reaching review of machine learning algorithms on sickness prediction tasks. Our goal is to perform predictive analysis with these machine learning algorithms on heart diseases using ensembles like bagging, boosting, stacking. Machine Learning algorithms used and conclude which techniques are effective and efficient. A huge medical datasets are accessible in different data repositories which used in the real world application.

**Keywords** — *Machine learning; cardiovascular disease; Decision tree(CART) ;Logistic Regression; Naïve Bayes; Extra trees classifier; Random Forest ; XGBoost.*

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## Accuracy of Classification Algorithms for Diabetes Prediction

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**Abstract** — Diabetes or Diabetes Mellitus is a group of diseases that occurs in humans due to excessive sugar in the blood, i.e., when the human body has high levels of blood glucose. The most common types of diabetes are Type2, Type 1, Prediabetes and Gestational Diabetes. Type 2 diabetes, is a chronic disease that occurs, when the body does not effectively use the insulin that it produces, and Type 1 diabetes occurs when the pancreas does not produce enough insulin as required by the human body. Prediabetes occurs when the blood sugar levels are very high but not as high when compared to the Type 2. Gestational diabetes usually affects pregnant women and here also the blood sugar levels are very high. According to the global report by the World Health Organization (WHO), approximately 422 million people suffer from the disease and n alarming 1.6 million deaths are attributed directly to diabetes every year. However, timely diagnosis of the disease and care of patients through simple lifestyle measures has proven to keep this deadly disease in check. The main challenge for doctors however, is the tedious process of identifying the factors that cause the occurrence of this disease, in an effective and timely manner. During the recent times this challenge is being addressed through Data Mining and Machine Learning techniques. The main aim of this study is to design a model that can predict the occurrence of diabetes in patients with maximum accuracy. These training models have been designed using the WEKA tool and four supervised machine learning classification algorithms such as Naïve Bayes, J48, SVM and Neural Networks have been used to predict the onset of diabetes at an early stage. The dataset used is the Pima Indian Diabetes Dataset (PIDD) obtained from the UCI repository and Chi-squared tests have been applied on this dataset to obtain only those attributes that have the highest tendency of causing diabetes in patients. The performance of each of the classification algorithms are compared and analyzed based on Accuracy, Precision, Recall, F-measure and ROC curves.

**Keywords** — *Naïve Bayes, J48, SVM, Neural Networks/Multilayer Perception, Diabetes, Chi-squared test, WEKA, Accuracy*

## Protein Network Alignment and Disease Prediction

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**Abstract** - Proteins interact each other to perform many cellular activities. These interactions can be considered as Protein Protein Interaction networks (PPI). Interacting proteins form protein complexes. Mapping nodes between networks is denoted as alignment. The main intention of network alignment approach is to identify the protein complexes, which in turn helps to identify the functionality of protein complexes in various cellular systems. These interactive units form the conserved pathways between the networks. So network alignment requires lot of attention and several algorithms and techniques have been proposed to address this. The study of PPI is widely recognized to know more about the underlying complex disease because proteins associated with any disease get connected and form subgraphs or pathways. In this paper, the authors compared the various aligners, the performance evaluation metrics, the common databases used for PPI evaluation and the importance of PPI network in biomedical research.

**Keywords** - Alignment, Biological Similarity, Protein Complexes, Topological Similarity

## Adaptive k-Nearest Centroid Neighbor Classifier for Detecting Drifted Twitter Spam

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**Abstract** — With the growth of Internet and its related technologies have resulted in increased usage of smart and Internet connected devices and large amount of time is spent on Social Network. Nonetheless, because of increase in attractiveness of Social Network, cyber offenders are spreading spam on these networks to exploit possible targets. The spammers trap users to malware downloads or external phishing URLs, which has been an enormous problem for online safety and user quality of exposure. However, the existing research fails to detect spam in Twitter and has become a key issue in recent times. Recent work [14], focused on using Machine Learning (ML) approach for detecting spam in Twitter, by making use of the statistical features of Twitter data. However, adoption of such method affects the classification accuracy of ML algorithm. Because the Statistical Feature characteristics of spam tweets vary with respect to time. This problem is known as “Twitter Spam Drift”. To address this problem, we present a novel non-parametric Adaptive K-Nearest Centroid Neighbor (AKNCN) Classifier. Further, for meeting real-time requirement the AKNCN is trained using one million spam tweets and one million non-spam tweets data. The AKNCN model can discover spam more efficiently than the state-of-the-art model. Experiment outcome shows the AKNCN attains significant performance with reference to Accuracy (A), F-Measure (F) and Detection Rate (DR) in real-world scenarios.

**Keywords** — Nearest Centroid Neighbor, Machine Learning, Social Networks, Statistical Features, Spam Drift, Twitter Spam Detection.

## Optimizing Random Forest To Detect Disease In Apple Leaf

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**Abstract**— Green Revolution was introduced in agriculture to meet the food scarcity. Despite the increase of agricultural production, farmers are challenged by infestations. Infestation reduced the crop yield. Traditional method involved manual inspection of plants to identify diseases. With advancement in technology, the infested plant leaves can be captured into images and subjected to processing by computing element. The computing system are being trained to process the image using Machine Learning algorithms to classify the images. Processing the image and detecting with improved accuracy is essential. Random Forest classifier is used to detect the disease in Apple Leaf. The accuracy of prediction by Random Forest can be influenced by configuring its parameters. This Paper talks about the various options that can be applied to optimize Random Forest classifier for improving the accuracy of detecting Apple Leaf disease.

**Keywords**— Machine Learning Algorithm, Random Forest, Apple leaf disease detection

## Device contextual content publishing in Media & Publishing industry using Big Data Analytics on AWS

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**Abstract**— Media & Publishing industry was traditionally a Paper and Print Industry. Since the revolution of Internet, industry started moving print to the digital form. Ever since the rapid penetration of mobile phones the media industry has rapidly scaled down paper publishing and adopted digital form successfully. Internet speeds have also increased the adoption of Digital Print's. With Newspapers being accessed globally in its digital form, it is extremely important for publishers to keep their content readily accessible and rich for various devices – Tablets, Laptops, Desktop's, Mobile Phones, Smart Watches, Digital reader's etc. This Paper talks about an ECONOMICAL & HIGHLY SCALABLE Big Data analytics implementation using AWS Elastic Map Reduce (EMR) to derive trends on end user usage patterns and choice of device. This will help the publishers rapidly scale to provide device contextual content to end users with ever changing access mechanisms

**Keywords**— Elastic Map Reduce, Device Contextual

## Kernel Induced Possibilistic Unsupervised Clustering Techniques in Analyzing Breast Cancer Database

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**Abstract**- The challenge in medical breast cancer database is to differentiate the sub types of cancers in the data. Analyzing the medical breast cancer database is most important one in identifying cancer types which cause deaths. Therefore in order to analyze the types of diseases in cancer databases this paper develops fuzzy set based unsupervised effective clustering technique and implements it with breast cancer database to divide it into available subtypes. This paper introduces the objective function of unsupervised effective proposed clustering technique by incorporating kernel induced distance, kernel functions, and possibilistic memberships. Through the experimental part of this paper the efficiency of proposed method is proved.

**Keywords:** Clustering, Fuzzy C-Means, Kernel Distance, Breast Cancer Data

# **NLP, EMBEDDED SYSTEMS**

# **Design and Verification of Serial Peripheral Interface Master Core Using Universal Verification Methodology**

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**Abstract** - In today's world, number of communication protocols for both long and short distance communication purpose, long distance protocols is USB(Universal Serial Bus), ETHERNET, PCI-EXPRESS. SPI (Serial Peripheral interface) and I2C are used for short distance communication protocols. SPI is one of the commonly used bus protocol for connecting peripheral devices to microprocessor .SPI is full duplex, high speed an synchronous bus protocol used for on-board or intra-chip communication In this project the configurable architecture of SPI Protocol with Wishbone Interface has been designed .The main advantage of this design is it overcomes the weaknesses of traditional SPI Bus protocol. As the complexity of the circuit is numerous so there is need of verification methodology to quench the product failure. This project emphasizes on verification of SPI master core verification using Universal Verification Methodology.

**Keywords** — SPI, Wishbone, UVM, SystemVerilog.

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# **Gotripper Chatbot For Tourism**

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**Abstract** — Tourism is one of the major revenue earners for any country. Many countries growth depends mostly on their tourism industry-generated income. Most travellers prefer going to different places and exploring new areas. While exploring, the tourists sometimes face some situation where they are not able to reach out other locals of the place for help because there is a problem in the communication or sometimes are majorly not aware of the place the travellers need to plan their trips well in advance keeping their time and destination in mind. Sometimes, in hurry, they tend to forget some places for their trip and regret later. This happens when there is no proper planning for the trip. Keeping an eye on all these issues, we introduce goTripper Chatbot. This application not only resolves the communication problem with the locals but also have different features which are required by a tourist when he or she is on their trip. It also helps in scheduling the trip with a perfect plan. Being a ChatBot, it will be easy to use with minimum work efforts required, time efficient and is very economical.

**Keywords** — ChatBot , tourism, tourists, natural language processing, weather, maps, live chat, OpenNLP, intents, entities

## NLP Models behind RASA Stack

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**Abstract** – This paper brings about the foundation of a platform for conversational AI the Rasa platform. This Rasa stack contains a block of open source machine learning tools exclusively used in intend to create a contextual chatbots and assistants. The services hold by this platform undergoes a major classification of powerful APIs and embedded together with Rasa stack which includes Rasa core and Rasa NLU in the form of an event stream discussed throughout this paper and also the algorithm involved in building upon this platform. Its ingredients include the Bag of words algorithm helping in simplifying representation used in the NLP, CRFs – Conditional Random Field used in statistical modelling and machine learning platforms and also advanced technology such as LSTMs neural networks. This paper discusses all the algorithms involved in building up the platform and also the result produced in building up the student assistant chatbot using this platform. It also encourages the use of this RASA platform for the user required custom format as per their requirements and also promotes to contribute in developing the platform for better efficiency of the platform to function.

**Keywords** - Bag of words, Chatbot, CRFs, NLP, Rasa stack

## Laptop Assistant and Alert Notifier

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**Abstract**— Artificial Intelligence is a multidisciplinary field whose aim is to automate activities that currently require human intelligence. Generally, Artificial Intelligence systems function based on a Knowledge Base of facts and guidelines that characterize the system's domain of proficiency. The factors of a Knowledge Base consist of independently legitimate (or at least achievable) chunks of records. In computer systems the information is stored historically in form of files. File is considered as a primary entity for keeping the information. The system has to automatically organize and utilize this information to solve the specific problems that it encounters. Devices or modules built on Artificial Intelligence are generally human friendly and easier to use. Building few modules which are interlinked and are accessed through one specific module is the idea behind our proposed system. Each module that is built has its own functionality and specification in generating output. One such module is dedicated for file security purpose.

**Keywords**—Access to folders, File Monitoring, Interactive Quiz, News, Personal Assistant, Speech Recognition.

## EMOTION RECOGNITION USING OPENCV

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**Abstract** — The human face plays a pivotal role in identifying emotions, regardless of subject-independent features. For human-computer interaction, facial expressions form a platform for non-verbal communication. In this regard, a system which detects and analyses facial expressions, needs to be robust enough to account for human faces having multiple variability such as color, orientation, posture and so on. Our paper focuses on the technicalities which makes the system capable of addressing the variability associated with facial expressions. This is achieved using concepts of machine learning, deep learning and artificial intelligence. The focus extends to making human-machine interaction not only an interactive process, but also a user friendly one. The implementation makes use of a Haar Cascade Classifier, Tensorflow and openCv.

**Keywords** — *Facial expressions, non-verbal communication, machine learning, Haar Cascade Classifier, Tensorflow, openCV*

## E-mail Classification System: A Review and Research Challenges

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**Abstract:** Individuals and corporate user's appetite to use email as one of the vital sources of communication. Email has become one of the part and parcel of our lives. Due to globalization, there is an extensive increase in the volume of emails received by a user. A particular user receives about 50-60 emails per day of different categories, for some users it may reach 100 emails. Out of these emails, most of them are not related to user interest. As the volume of emails receive continues to grow, the user has to spend a significant amount of time to process emails. It requires a system to manage these emails and to develop an automated classification system to classify emails into various categories as per the individuals and professional needs such as: academic, business, commercial. This paper presents a comprehensive review of several articles of email classification. The generic framework for email classification is devised and various steps in the framework are discussed in detail. The comparative analysis of various email classification techniques is discussed. The various challenges in the field of email classification are also presented.

**Keywords:** E-mail classification, e-mail categorization, text classification, pre-processing techniques, feature extraction and machine learning techniques.

## Point-of-interest Recommendation in Location-based Social Networks

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**Abstract—** In today's world, location based social networks are mainly used for recommending point of interest. The behaviour of users is mainly arriving at a POI location and these are influenced by their friends and it's also based on their individual preference. Social networks can be used by businesses to lure more customers. Depending on the categories of POIs, different target users have a different impact on different categories. This paper selects the POIs which have more influence on the target user by providing a POI score. Based on the score, businesses can look to expand their impact scope.

**Keywords**— location based social networks; location promotion; POI location.

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# **NEURAL NETWORKS AND DEEP LEARNING**

## SMART BLIND STICK USING ARTIFICIAL INTELLIGENCE

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**Abstract:** Smart Blind Stick is a device designed to help guiding the visually impaired. This device reduces human effort required to see and gives the user a better understanding of his/her surroundings. Furthermore, it also provides an opportunity for visually or physically impaired people to move from one place to another. Smart Blind Stick has gained a lot of interests in recent times. These machines can also be used in old age homes where the elderly may have difficulty in their movements due to decreased vision. This device serves as a boon for those who have lost their sight. Several products have been developed in the past to address this problem. The new generations of devices that are being developed and used, feature the use of artificial intelligence to gain insights on what is happening around the user. With this project, we aim to aid people in need to “see” the surroundings. Since the field of artificial intelligence is making fast progress in recent times and features like image recognition are getting easier and computationally feasible, we incorporated these features in our device. Our project focuses on object detection and classification and this information is then relayed to the user in means of sound or speech.

**Keywords-** Object detection, YOLO, Tensorflow, eSpeak, Raspberry pi, Blind, Visually impaired.

## YOLO Based Object Detection Using Drone

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**Abstract**—The headway of convolutional neural systems (CNNs) and Deep learning (DL) in the previous decade brought about significant upgrades in computer vision. One of the recipients of these advances is the task of object detection, where the goal is to distinguish and locate real-world objects inside pictures or videos. Real-time object tracking on a drone under a dynamic situation has been a difficult issue for a long time, with existing methodologies utilizing off-line calculation or powerful computation units on board. This paper displays lightweight real-time on board object tracking methodology, which varies, from basic image classification in that the AI demonstrate needs to distinguish numerous objects in a single frame, and figure out where these objects are found. The advances in procedures, joined with the improved PC equipment, put real-time object detection well inside the capacities of present day processors. Real-time object recognition is essential for some utilizations of Unmanned Aerial Vehicles (UAVs), for example, observation and reconnaissance, search-and-rescue, and foundation assessment. In the previous couple of years, Convolutional Neural Networks (CNNs) have ascended as an unbelievable class of models for recognizing picture content, and are seen as the standard strategy for generally issues.

**Keywords**—Detection, Drone, Pattern Matching, Privacy Preserving, Security Vulnerabilities, Sensitive Items, Yolo

## Classification of mammograms using attention learning for localization of malignancy

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**Abstract** - Mammography is a specialized medical imaging that uses a low-dose x-ray system to examine the breasts. A mammogram is a mammography exam report, which helps in the detection and diagnosis of breast diseases in women at an early stage. This project proposes to classify mammography breast scans into their respective classes and uses attention learning to localize the specific pixels of malignancy using a heat map overlay. The attention learning model is a standard encoder-decoder circuit wherein convolutional neural networks perform the encoding and recurrent neural networks perform the decoding. Convolutional neural networks enable feature extraction from the mammography scans which is thereafter fed into a recurrent neural network that focuses on the region of malignancy based on the weights assigned to the extracted features over a series of iterations during which the weights are continuously adjusted owing to the feedback received from the previous iteration or epoch. Mammography images are equalized, enhanced and augmented before extracting the features and assigning weights to them as a part of the data preprocessing procedures. This procedure would essentially help in tumor localization in case of breast cancers.

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**Keywords:** Convolutional neural networks, Recurrent neural networks, Attention learning, Encoder-Decoder

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## CRIME DETECTION IN SURVEILLANCE VIDEOS

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**Abstract**- During the last few decades, surveillance cameras have been installed in many locations. Analysis of the information captured using these cameras can play effective roles in online monitoring various event prediction and goal driven applications including anomalies and intrusion detection. Crime has escalated in our day to day lives, surveillance videos are used to capture a variety of real-world anomalies. Monitoring automatically a wide critical open area is a challenge to be addressed. We can exploit recent computer vision algorithms in order to replace human labour. The video surveillance system is two-dimensional spatial information over a third dimension, that detects and predicts abnormal behaviours aiming to achieve an intelligent surveillance concept. In this paper, we review different approaches used to learn anomalies by exploiting both normal and anomalous videos. To avoid annotating the anomalous segments or clips in training videos, which is very time consuming, the learning algorithm learns anomaly through the multiple instances of ranking frameworks by leveraging the weakly labelled training videos.

**Keywords**- anomaly detection; surveillance systems; computer vision; feature extraction; object detection; object tracking; C3D; CNN; deep learning.

## Forest Fire Detection Using Convolution Neural Networks

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**Abstract**— there have been many technologies developed recently on embedded processing that have enabled the vision based systems to detect fire using convolutional neural networks (CNN). All such methods need large memory and more computational time. In this research paper we initiate more efficient fire detection strategy with high performance. Here we are considering computational complexity and exact model for the problem by comparing other computational expensive networks. By considering the nature of problem statement, we can increase the efficiency and accuracy of the model. The results on benchmark datasets of fire shows us the efficient work of the proposed system with validation for detection of fire under cctv maintenance compared to other art of methods.

**Keywords**— CNN, Fire detection, stride, filters, pooling, surveillance videos.

## Smart Door Lock using Face Recognition

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**Abstract:** Artificial intelligence and machine learning are the buzz words in the industry as well as for research. The world is moving towards automation and a project in that field is a step closer towards it. The main idea of the project is to make smart door lock using face recognition. The face recognition is developed using artificial intelligence, image processing and machine learning. Based on the face that is recognized by the system it makes a decision based on what it has learnt. It decides whether to unlock the door or not. Machine learning is also used and implemented for the software to work efficiently. With the increase in the data set the efficiency will also increase. The system is shown and made to learn using different machine learning techniques. This project improves the security of homes and also makes it easier for segregation of the guests. Apart from this an app is used to send notifications to home owners so as to take appropriate actions. It is extremely useful as it solves one of the leading problems in the world.

**Keywords:** Machine Learning, Android, Artificial Intelligence, Face recognition

## Traffic Management Using Convolution Neural Network

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**Abstract**—Traffic is one of the major problems in most of the metropolitan cities. Classifying the traffic conditions are important for determining traffic control strategies and management. Traffic congestions have negative impact on society, as a lot of time is wasted in it and controlling the congestions is necessary. By classification we can get to know which lane has traffic, from which we can further check the reasons for traffic and take appropriate control methods to improve the performance. Video traffic monitoring is suitable source of traffic data. In this paper, classification of road traffic is done based on video surveillance data. Convolution Neural Network is used to classify the video content. Convolution Neural Network requires minimal preprocessing when compared to other classification algorithms and is known for its accuracy. The video is classified based on rating of the traffic of its content. The Convolution Neural Network is first trained and then it is evaluated and updated using validation set. Once the model is completely trained it is tested with the testing set. This trained model is capable of processing the live streaming video and classifies each of the frames and gives the rating of the traffic for each lane, which can be helpful for traffic management.

**Keywords**—Traffic management, Convolution Neural Network.

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## **INTRUSION DETECTION SYSTEM USING DEEP NEURAL NETWORK AND REGULARIZATION OF HYPER PARAMETERS WITH ADAM OPTIMIZER**

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**ABSTRACT**-Intrusion Detection Systems (IDSs) study is unavoidable in the field of network security due to the present target oriented attacks for taking secret data of an organization. Classifying and detecting attacks are highly technical and tedious. In existing works, the accuracy of intrusion detection in network traffic is different for different algorithms. This paper proposed a better intrusion detection system using Deep Neural Network and regularized the training parameters by Adam optimization. The proposed system consists of six phases namely data collection, data framing, data splitting for training and testing, pre-processing/encoding, Regularization with Adam Optimizer, training and testing. It produces better accuracy in detection process than the existing Deep Neural Network algorithm. The NSL\_KDD data set has been used for analyzing the proposed system.

**Keywords:** Intrusion Detection Systems (IDSs), Deep Neural Network(DNN), Rectified Linear Unit (ReLU), Software Defined Networking(SDN), Adaptive moment estimation (Adam), Stochastic Gradient Decent (SGD), Denial of Service (DoS), User-to-Root (U2R), Remote-to-Locals (R2L), Probe, Normal

# **DIGITAL IMAGE PROCESSING**

## ROBOTIC ARM USING COMPUTER VISION

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**Abstract**— A Bot which pursues Human hand developments. Its unlimited authority lies with the client and doesn't have any knowledge of its own. Programmed robots having man-made brainpower are a danger to society and may cause hurt in certain situations. Subsequently, having full oversight over the robot is a protected method to work with such robots. In this paper, we have proposed a comparable arrangement of a robot. Catching pictures from the PC web cam progressively condition and procedure them as we are required. By utilizing open source PC vision library (OpenCV for short), a picture can be caught on the bases of its hue saturation value (HSV) extend. The fundamental library capacities for picture dealing with and handling are utilized. Fundamental library capacities are utilized for stacking a picture, making windows to hold picture at run time, sparing pictures, and to separate pictures dependent on their shading values. I have additionally connected capacity to edge the yield picture so as to diminish the twisting in it. While handling, the pictures are changed over from their essential plan Red, Green, and Blue (RGB) to an increasingly reasonable one that is HSV.

**Keywords**-OpenCV,WebCam,Arduinounoboard,RoboticArm

## Click-n-Purchase: A Shopping guide with Image Retrieval based on Mobile Visual Search in Fashion Domain: A Survey

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**Abstract**— In recent years, the use of e-commerce based applications via Internet has grown rapidly, thus increasing the volume of data in the web. Therefore it necessary to have faster retrieval of required data from the web. This paper provides a comprehensive review of various image retrieval techniques with their problems. The survey presents various techniques used so far for the Image Retrieval from the Web based applications, in order to make more efficient way of retrieving the information by using image retrieval techniques. The survey describes which techniques are used for image retrieval and the problem faced during the retrieval process. Finally, based on the use of existing techniques and the demand from the real-time applications a shopping guide will be presented with enhanced features of image retrieval techniques named as Click-n-Purchase, where the input for this application is taken from the mobiles and the visual search of the related images can be extracted from web based fashion domain based applications, so that user can be able to search their favourite items in less amount of time.

**Keywords**— Click-n-Purchase, Fashion domain, Image Retrieval Techniques, Mobile Visual Search

## **Image Steganography Technique based on Canny Edge Detection and Hamming Code for Medical Data**

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**Abstract**— Image steganography has major role in enhancing the confidentiality of sensitive information related to business information, research data, health record data and so on. Here the sensitive data considered is Medical data. When the medical image is transmitted through insecure public network, there are chances for medical images to be tampered. To avoid intruders in viewing the sensitive data i.e. medical information the need of hiding it becomes the foremost criteria. This project mainly aims at enhancing medical integrity. To achieve medical integrity, it is required to hide the medical information within a cover image which is the medical image here. The proposed system aims at providing high security of data integrity by using cryptography along with steganography. The method of digital steganography is involved in the transfer of high imperceptible method that enhances the hiding of Electronic patients record (EPR) into medical images without major modification in the data transfer. A novel steganography algorithm based on local reference edge detection technique and exclusive disjunction (XOR) property is proposed. It is predominantly required to protect and enhance the security methods ensures that the eavesdroppers will not have any suspicion that medical image or sensitive medical data is hidden in that image

**Keywords**—Digital Steganography, Electronic Patients Record (EPR), edge-detection, XOR, Medical Data

## **Face Recognition System Based on LBPH Algorithm**

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**Abstract**— In this modern time, identifying a person using a face is a one most standard biometric approach to distinguishing an individual from others. So techniques are required to identify a face must be quick and sufficiently enough to work in real time. But there are many difficulties within the execution of face identification in low lighting condition. In this paper, we have proposed a system that is using Local Binary Patterns Histogram algorithm for identifying a face. It can recognize both front and side faces and upgrades the value of poor enlightened picture and also expands the recognition rate in real time.

**Keywords**— Face recognition, LBPH, Histograms, Identification Process

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## **Unfolding the dimensions of Brain-Computer Interface**

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**Abstract**— The proliferation of technology is infiltrating all the aspects of life dramatically, as a result of which world is becoming dynamic and complex. Brain-Computer Interface (BCI) or Brain-Machine Interface (BMI) is an emerging field of technology whose goal is to make a real-time path between brain and electronic devices such as computers, robots, artificial limbs, self-driving cars and everything which can be connected with the internet. In BMI, brain or cerebral control these by transmitting and receiving electrical signals. This paper presents an idea of how with the help of technology we can control things. or this an example is explained where the system is based on steady-state evoked potential (SSVEP) is used, where it is made to give mobile number as an input. The buttons are typed on a virtual keypad similar to normal keypad. Each key or a button is assigned with a particular key and SSVEP is used to judge their frequencies.

**Keywords**— BCI, BMI, SSVEP

## Mechanisation of Nuclei detection and segmentation:a leap in Medical Research

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**Abstract**— The process of identifying and segmenting nuclei in the cell is a prerequisite for the analysis of various genetic disorders. The main carrier of genetic information in most of the living organisms is Deoxyribonucleic acid(DNA) which is present in the nucleus of the cell. Detection and segmentation of nuclei is laborious and time demanding. This paper intends to explore an untouched approach towards solving the issue by automating the process which drastically reduces the development time and required man power. Many classic methods like Otsu, watershed were proposed but they failed to accurately segment and few caused over segmentation. In the recent timespan, the executions of Convolutional Neural Networks (CNN) have made it evident that they demonstrate impressive performance on biomedical image classification. CNN methods also face issues with stipulation for hefty delineated tutoring data sets but in this context, a CNN architecture U-Net which is proficient of grasping knowledge from smaller pre-processed augmented data-set is proposed. The proposed encoder-decoder U-Net model indicates better execution in identifying genuine fragments contrasted with the cutting edge system for rapid CNN shows better performance in detecting true segments compared to the state-of-the-art technique Faster Recurrent-CNN (R-CNN).

**Keywords**—CNN, R-CNN, U-Net Model

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## Real Time Person Detection and Classification using YOLO

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**Abstract**— A Convolutional Neural Network (CNN) is a class of deep neural network most commonly used in analysing visual images. Various systems and applications have been built to detect and classify the objects in a faster way taking CNN as its foundation. In this paper, we introduce a model to identify and classify people wearing ID card. Our model uses an object detection system called YOLO (You Only Look Once) for detecting and classifying objects in real-time videos. In the YOLO algorithm, a single convolutional network predicts the bounding boxes and the class probabilities for these boxes. We aim to use our model for authentication, surveillance and security purposes at organizations, corporations and educational institutions to detect an unauthorized person at the premises or somebody without a valid identification document. Using the object detection and classification we aim to build a model which would alert the respective authorities on the matter.

**Keywords**—Convolutional Neural Network, You Only Look Once(YOLO), Object Detection and Classification

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## Development of Image Annotation Tool by Using Region Grow Algorithm

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**Abstract**— Image annotation conjointly called as automatic picture tagging or linguistic compartmentalization. It is the method through which pc systems mechanically provides the information within the style of keywords to a image. Several techniques are planned for picture annotation from the previous decades, that provides enforcement on common place datasets. However, most of those works fail to match their ways with easy baseline techniques to justify the necessity for advanced models and subsequent coaching. During this paper, we propose a vicinity grow algorithmic program for development of image annotation tool. This method uses low-level model options and a straight forward collection of the distances to find out closest homogenized pixels of a given picture and mix one another to make a vicinity of image.

**Keywords**— Image annotation, Region grow Algorithm.

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## An approach to face detection and recognition using viola jones

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**Abstract**— The human face may be a muddled visual dimension model and it is therefore extremely difficult to create a computational model for the cognitive basic process. The paper displays a system for perceiving the human face smitten by image-based highlights. The technique proposed is available in 2 phases. In an image using Viola-Jones calculation, the main preparation distinguishes the human face. Using a combination of Principle Component Analysis and Artificial Neural Network, the distinguished face within the image is perceived at the next stage contrasting the execution of the proposed strategy with existing ways. The proposed strategy recognizes greater accuracy in the acknowledgement.

**Keywords**— Face recognition, Viola-Jones algorithm, PCA, AAN.

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## Face Recognition Based Attendance Management System Using DLIB

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**Abstract**— Real time face recognition technology has become a prominent tool for addressing solutions to many complex problems. Such as identification and the verification of identity. Face recognition technology also addresses the time consumption issue that arises in other biometric systems. Taking Attendances manually is always a monotonous job and it additionally consumes heap of our time. The prevailing biometric attendances wastes a great deal of our time and these systems can be cheated easily. In our proposed system the attendance is recorded by using a camera that is attached in front of classroom which is continuously recording but the system will never store any recorded files. And the features obtained from the detected images are compared with the features stored in the database and the system mark's the attendance. This paper aims at automating the whole process and implementing a system that can't be cheated. The entire system is built by using a machine learning tool called DLIB.

**Keywords**— DLIB, Biometric, Attendance, Face Recognition.

# Image processing and Controller Based Game Play Using Hand Gestures

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**Abstract**— Hand gesture is one of the most primitive ways of communication and is an area of dynamic examination for computer based vision and AI. This is a zone with numerous potential applications, giving clients a simpler and extra normal approach to speak with robots/system interfaces, without the need of any additional gadgets. In this way, the main objective of hand gesture recognition connected to Human-Computer Interaction (HCI) is to shape frameworks, which may decide explicit human motions and use them to pass on data and control gadgets. For that, vision-based hand gesture interfaces need fast signal acknowledgments continuously. This paper proposes the utilization of hand gestures and the utilization of three dimensional (3D) pivot of hand motions as the reason for clients to communicate with a computer. This paper presents strategies for Game Play utilizing both Image Processing strategy and Arduino combined with a sensor.

**Keywords**— Gesture recognition, Image processing, Feature extraction, Human Computer Interaction, MATLAB, Controller, ADXL335 Accelerometer

# SMART TRAFFIC LIGHT

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**Abstract** — With increase in population, there has been a significant rise in the number of vehicles on our roads. This marked increase in vehicles has resulted in most urban areas being gridlocked in traffic jams. In order to reduce this congestion and set up a functional system of traffic management, we have proposed the Smart Traffic Light (STL), which uses image processing and a scheduling algorithm to automatically manage the duration of traffic signals. Another feature of the STL is its management of signals to prioritise emergency vehicles such as ambulances or fire engines by ensuring green signals in their specified routes in order to ensure minimum delay in traffic.

**Keywords**- Image Processing, Object Recognition, Smart Traffic Light

# Reversible Data Hiding in Encrypted Images

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**Abstract**— Reversible information concealing in scrambled pictures has achieved more consideration as of late in research network. Security assurance of extra information alluring for crime scene investigation. In this paper, another technique for reversible information stowing away in scrambled pictures. Our strategy embraces the methodology of holding adequate space for the extra information before encoding the spread picture. First we recognize reasonable squares for concealing information from different pieces of the picture. Before scrambling the picture, at least one LSB-plane of these squares are upheld up into residual pieces of the picture utilizing a high-performing customary RDH strategy that chips away at decoded pictures. In the wake of scrambling the picture, those least significant bits are utilized to conceal extra information. Recuperation of unique spread picture and blunder free extraction of extra information is ensured dependably. Also, the proposed technique is straightforward and instinctive. Tentatively outcomes demonstrate that our technique outflanks the cutting edge strategies for reversible information covering up in scrambled pictures.

**Keywords**— Reversible data hiding; interpolation; encryption; histogram; reservation

## Data Recovery from Encrypted Image and Recovering Image

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**Abstract**—This paper refers to the data hiding technique in an encrypted image and restoring image as it was before to its fullest. There are three bids of the framework to this process, which are a content owner, data hiding and recipient. The content owner encrypts the image with ciphertext making it an encrypted image. Data hider channelizes encrypted image into 3 different channels and adds each with additional bits in order to obtain marked encrypted image. At the recipient end, the noise from the image could be removed consuming the extraction key and the image obtained will be intact as original. Utilizing RDH\_EI method, we not only receive secret information but also, the image is recovered using progressive recovery.

**Keywords**—Data hiding, Information hiding, encrypting images, Recovering encrypted image

## Traffic Sign Detection and Recognition

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**Abstract** — Traffic sign location is for empowering self-sufficient vehicle driving frameworks. It requires a unique treatment of information: need a strong and ongoing investigation of a circumstance. It gets increasingly troublesome in the cities like condition where various traffic signs, leaving vehicles, people on foot and other moving or foundation pictures make the acknowledgment much troublesome. The techniques are partitioned into three classifications: shading based, shape-based, and learning based. Our sign location step depends just on shape-discovery (square shapes or circles). Traffic signs identification and acknowledgment (TSR) is a key module for new driving help keen capacities, as it is a prerequisite for the vital dimension of traffic scene understanding. A TSR framework as a rule includes two primary advances: 1/ identification of potential traffic signs in the picture, in view of the normal shape/shading plan of looked for traffic signs; 2/ arrangement of the chose areas of intrigue (ROI) for distinguishing the definite kind of sign, or dismissing the ROI.

**Keywords**-web cam, image processing, matlab,detection,recognition, traffic signs

## Detection of Diabetic Retinopathy using Image Processing

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**Abstract**—Diabetic Retinopathy (DR) is one of the main sources of visual impairment and eye malady in working age population of the world. This undertaking is an endeavour towards finding a robotized approach to distinguish this ailment in its initial stage. In this task we are utilizing directed learning strategies to characterize a given arrangement of pictures into 5 classes. For this task we are employing various image processing techniques and filters to enhance many important features. This approach intends towards finding an automated, suitable and sophisticated approach using image processing and pattern recognition so that DR can be detected at early levels easily and damage to retina can be minimized and also to help ophthalmologists to diagnose fast, accurate, and reliable diabetic retinopathy

**Keywords**- Diabetic Retinopathy (DR), Supervised learning, Image processing.

## Leaf Disease Detection

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**Abstract**— India is mainly known for land of agriculture. Majority of the population depends on agriculture. Farmers are unaware to find the disease of the crops which may affect their livelihood. This is one of the major problems where the farmers are facing. To overcome this problem, a device which detects the disease of the leaf using Image processing and machine learning. With the help of image processing, the affected leaf pictures are taken as reference detects the disease of the leaf. Mean Shift algorithm and SVM classifier are used for segmentation and in classification of the disease. This application is used for farmers in identifying the disease of the leaf.

**Keywords**—SVMclassifier,MeanShiftalgorithm,Imageprocessing.

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## Life Logging Using Egocentric Perception

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**Abstract** - This paper aims to provide a solution that uses a multimodal approach to analyse large intake of audio and video data and use it to understand the emotions of a subject and to describe the current surroundings to the subject in question. The model is trained on the egocentric data, which contains audio and video signals. The model contains emotion recognition and a speech recognition which extract features of their own allowing to perform a classification on the emotions. The large inflow of data from up and coming technologies like Google Lens and onset of Internet of things are key application points for this solution.

**Keywords**:-Emotion Recognition, Face Extraction, Speech Recognition,Scene Description,Life Logging

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## Automatic noise detection and reduction in images

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**Abstract** - Data classification in presence of noise will cause a lot of worse results than expected for pure patterns. In this project we tend to investigate this drawback within the case of deep convolutional neural networks so as to propose solutions which will mitigate influence of noise. The main contributions presented in this project include using convolution neural network as an image classifier for detecting noise in the images and using different opencv2 inbuilt methods to mitigate noise in the images. Though a number of techniques are introduced for this purpose, using neural networks we can achieve a greater accuracy.

**Keywords**— Convolution neural networks, open cv2, Keras API, Jupyter Notebook, TensorFlow.

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## **Design of High Speed Viterbi Decoder and Convolutional Encoder for SDR –Survey Paper**

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**Abstract**— The data transmission in any wireless communication system will be affected by attenuation, interference, noise and distortion which adversely affects ability of the receiver to receive the inputted information correctly. The Convolution encoder and Viterbi decoder are best suited for forward error detection and correcting codes for a channel, which will be affected by noise. The convolution encoder is used at the receiver end to correct errors. Software defined radio uses different modulation and encoding procedures and techniques by varying its configuration continuously. In recent years, it has earned a great reputation for its flexible ability to adapt different procedures and techniques without changing the existing hardware. Software defined radio(SDR) reduces the issue of cost complexity and provides a flexible means of a communication system. The paper proposes the use of convolution encoder and viterbi decoder with a limited length of 3 and code rate of  $1/2$ . The project proposed the Viterbi decoder architecture with improved architecture which optimizes critical path to achieve higher speeds. The decoder exploits advantages in SDR applications mainly because of area efficiency and speed. This design of Viterbi is carried out in MATLAB and verified. RTL coding is done using Verilog HDL, Xilinx Spartan Series FPGA will be used for implementation. Modelsim and Vivado is used for simulation Functional and Timing simulations.

**Keywords**—Viterbi,FPGA,convolutional encoder,RTL, HDL,SDR

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## **Classification of land cover using Data Analytics for Hyperspectral Imaging**

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**Abstract**— Recent advances in remote sensing technology have made hyperspectral data with hundreds of narrow contiguous bands more widely available. The hyperspectral data can, therefore, reveal narrow differences in the spectral signatures of land cover classes that appear to be similar when viewed by multispectral sensors. If successfully used, the hyperspectral data can yield higher classification accuracies and more detailed class taxonomies. In this approach, we are using deep learning and neural networks to train a model for classifying land cover using data analytics in hyperspectral imaging.

**Keywords**—Hyperspectral imaging, Land cover classification, Deep learning, Tensor flow

## **Password processing scheme using enhanced Visual Cryptography and OCR in Hybrid Cloud Environment.**

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**Abstract**— to authenticate the user using the password can be achieved by simply converting the password into the values is called hash. Even though there are many websites which can unlock the hash values by using some cracking tools called as cyber attacks. This cyber attacks are very much common by the way of hacking the passwords by hackers. Hackers can undeniably figure out the plain text using such software's it gives n-number of examples of plaintext samples which the hackers can execute and crack open or penetrate into personal information in the Hybrid Cloud Environment. To overcome this type of trouble or mishap our system is recommended. The proposal is that our system not only converts the plaintext into hash values but it will be stored as an image, the user will only be having an ID and login password (at the time of user creation) . The user when he wants to login he will receive an email in which a share-1 image will be present which is encrypted completely even he himself can't be able to recognize what it is, the server will ask him to download the share-2 image then he has to enter his user ID for the server to recognize his User-ID. Since these images are encrypted both share images 1&2 are encrypted by VC (Visual Cryptography) then the user has to merge these two images, if it matches then only the user can login. This merge method undergoes OCR (Optical cryptography recognition). Our aim is to prevent hackers from gaining access to personal information of the users in Hybrid Cloud Computing Environment.

**Keywords**—Visual cryptography, Optical Character Recognition(OCR), Hybrid Cloud Computing

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## **REVA University Campus Tour using Virtual Reality**

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**Abstract**—Stepping into the magical world of Virtual Reality gifts an experience unlike any other. All around us all things are bright and beautiful. By this state-of-the-art work, we aim to give our users/stakeholders/visitors the experience of visiting the REVA University campus virtually, from any place at any desired time. We would be able to achieve this by a Head Mounted Display (HMD), here we used the VR Box. Once the user wears the VR Box, on it will be mounted a display which is the key tool in transporting the user virtually to the campus. It will make you feel like you are there mentally and physically. When you turn your head, you can able to see the 360-degree world turns with you, so the illusion created by whatever world you are in is never lost. There are several types of virtual reality from fully-immersive and non-immersive to collaborative and web-based. Here, we have used the fully-immersive variation because this is the explorable and interactive 3D computer-created world that can take you around the campus. The user will be able to experience Virtual Reality tour with a full satisfaction of having visited the REVA University without having to physically walk around the entire campus.

**Keywords**—REVA University, Virtual Reality, Unity, VR Headset

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## Implementation of Graphical Password System

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**Abstract**— These days Traditional text based password schemes are subjected to different types of attacks. To avoid this, the alternative method could be the graphical password schemes where instead of text, images are chosen for a password. In this paper, we provide a solution based on text based graphical password system techniques. The two main objectives to perform this research is 1) To thwart shoulder surfing 2) To minimize the search time of pass images on the login screen. This implementation will include display of random images for different users which would be very difficult for a person to hack i.e., shoulder surfing. The project is being implemented as a resulting android application using Android Studio. The main intention of the paper is to avoid Shoulder Surfing.

**Keywords**— Shoulder Surfing, Text Based Password, Graphical Password System.

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## An Effective Authentication Scheme for Videos Using Invisible Watermark

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**Abstract**— In this paper, a novel reversible keyless invisible authentication method for video piracy protection which uses randomized pixel for embedding real identity information is proposed. Randomization at two different levels is not considered in any of the existing methods. Videos, with this proposed embedding of authentication information, ensure minimum distortions and maximum resistance to the removal of authentication information. Keyless invisible embedding process increases the security and reduces the cost. This proposed approach enhances the randomization of the specific pixels where authentication information will be stored in a frame and the location of such modified pixels is stored in an immediate next frame. Each pair is identified with an embedded random number. Modified Least Significant Bit (LSB) based invisible watermark mechanism is used to embed the bits which are cost effective due to simplicity and which can withstand statistical attacks. During extraction, frame with pixel locations is used. The extracted information will be compared to assure the authenticity of video. The Euclidean distance, PSNR, MSE, SSIM proved that the proposed method can withstand visual attacks. StirMark test proved that the proposed algorithm is highly robust.

**Keywords**— Modified Least Significant Bit, Invisible Watermark, Video Authentication

## Efficient Face Recognition System For Identifying Lost People

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**Abstract**—In the world, a countless number of people are missing every day which includes kids, teens, mentally challenged, old-aged people with Alzheimer's, etc. Most of them remain untraced. This paper proposes a system that would help the police and the public by accelerating the process of searching using face recognition. When a person goes missing, the people related to that person or the police can upload the picture of the person which will get stored in the database. When the public encounter a suspicious person, they can capture and upload the picture of that person into our portal. The face recognition model in our system will try to find a match in the database with the help of face encodings. It is performed by comparing the face encodings of the uploaded image to the face encodings of the images in the database. If a match is found, it will be notified to the police and the people related to that person along with the location of where the person is found. The face recognition model that we have used maintains an accuracy of 99.38% on the Labelled Faces in the Wild Benchmark which comprises of 13,000 images.

**Keywords**—face encodings, face recognition, finding, lost kids, missing people

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# **MOBILE COMPUTING AND CLOUD COMPUTING AND SECURITY**

## **Detection Of E-Banking Phishing Websites**

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**Abstract**— The term Phishing refers to a fraudulent technique of stealing people's private data .The main aim of phishing attack is to steal consumer private data by provoking them to enter their details in the portals which are sent by the attacker .These portals resembles with the original website portal and provokes the users to enter their data like username and password ,bank account details and other sensible information .The main goal of this paper is to perform research on the machine learning data techniques to detect the phishing attacks and to assist the police in handling the complicated phishing activities.

**Keywords**— Phishing, criminal technique, associative classification algorithms

## **PLACEMENTO – An Android Based Project for the Automation of Placement and Training Department**

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**Abstract**— Training and Placement (T&P) department is an inevitable content to any educational Institute. Even today most of the work is being done with human interventions. The main aim of this paper is to automate the T&P cell of Reva University. The main feature of this paper is the generation, verification, authentication and easy analysis with maintenance of relevant data. This is achieved by means of modern Technology like Android and database servers. This will provide the facility to maintaining student data along with placement records of the college. This will serve as a medium of free communication and feedback between the students and the placement department. The paper aims to provide maximum optimization and security along with minimal manual work. This will be helpful in efficient and better management of all placement and Training activities on campus. With the development of this challenge, the University can maintain computerised records without redundant entries.

## New Approach to Product Recommendation System by Using Blog Data for E-Commerce Applications

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**Abstract**— Communitarian sifting (CF) calculations have been generally used to manufacture recommender frameworks since they have recognising ability of sharing aggregate wisdoms and encounters. Notwithstanding, they may effortlessly fall into the snare of the Matthew impact, which will in general prescribe prevalent things and consequently less famous things become progressively less well known. Under this situation, a large portion of the things in the proposal list are now well-known to clients and in this way the execution would truly deteriorate in discovering cold things, i.e., new things and specialty things. To address this issue, a client overview is first directed on the internet shopping propensities in China, in light of which a novel suggestion calculation named trend-setter based CF is recommended that can prescribe cold things to clients by presenting the idea of pioneers. In particular, trend-setters are an extraordinary subset of clients who can find cold things without the assistance of recommender framework. In this way, chilly things can be caught in the suggestion list through trailblazers, accomplishing the harmony among good fortune and precision.

**Keywords:** Recommendation System; E-Commerce Applications; Machine Learning; Sentiment Analysis

## Campus Career Management System

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**Abstract**— Campus Career Management Portal is online application to lessen the distance between member of the work force and provider of the work. The Principle goal is to make the enrolment process of colleges easy. This Campus Career Management Portal is structured based on Provider of work and Member of the work force. Campus Career Management Portal allows member of work force to enrol subtleties that belongs to them such as abilities and involvement in any other activities, and after that on the other hand even it grants providers of work to post their necessities with the Structure. Campus Career Management framework is useful for the activity suppliers for example organizations which need representatives, work searchers who need work, (for both Experienced and fresher's). These entries primary point is to give the opportunities accessible to the activity searchers without taking any charge from them in IT innovations. Online test can also be taken by students. Campus Career Management Portal will consequently send sends to all activity searchers whose abilities are coordinated with the necessity. The system is an application that is designed is viably utilized with the login credentials.

**Keywords**—Member of the workforce, provider of the work, Representatives,

## Comparative Study of Encryption Algorithms for Emproved Security:Survey

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**Abstract**—The issue of information security is one of the most important issues of the modern day. Since the internet has become hugely wide spread, it has unbelievably helped in fast and efficient access to the cloud services and information on the cloud. The issue of securing this information has become an extremely serious problem. As previously known that the hash algorithms are one-way algorithms and cannot be retrieved. These algorithms provided a solution to the problem of analyzing the frequency of characters within a particular text by using encryption for more than characters. The proposed algorithm will provide a better model for finding scattered value. This system is characterized by its ability to face the threat of dictionary attacks, making it difficult to prepare a dictionary of scattered values. In this survey, a comparison was made between the proposed model and the MD5, SHA1 systems.

**Keywords**— hash algorithm, one-way, attack dictionary, strong collision, MD5, SHA1 systems.

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## Security In Cloud Computing: A Survey

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**Abstract**— As per a Forbes' report distributed in 2015, cloud-based security spending is required to increment by 42 percent. As per another examination, the IT security use had expanded to 79.1 percent by 2015, demonstrating an expansion of something beyond than 10 percent every year. Worldwide Data Corporation (IDC) in 2011 demonstrated that 74.6 percent of big business clients positioned security as a noteworthy test. It is a normally acknowledged actuality that since 2008, cloud is a reasonable facilitating stage; be that as it may, the recognition regarding security in the cloud is that it needs critical upgrades to acknowledge higher rates of adaption in the venture scale. As recognized by another examination, a large number of the issues standing up to the distributed computing should be settled direly. The industry has made huge advances in combatting dangers to distributed computing, yet there is something else entirely to be done to accomplish a dimension of development that at present exists with conventional/on-start facilitating. *This paper outlines various companion looked into articles on security dangers in cloud figuring and the preventive techniques. The goal of my examination is to comprehend the cloud parts, security issues, and dangers, alongside developing arrangements that may possibly alleviate the vulnerabilities in the cloud.*

**Keywords**—Security Issues, Distributed Computing

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## Design and Development of Legal Freelance Portal

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**Abstract**— This observational research about how the web is presently falling flat laypeople who are scanning on the web for lawful help to their life issue and what a future plan of client focused guidelines and practices for better legitimate help on the Internet could be. It initially looks at the current writing about how the web can best be utilized as lawful asset and business as usual of legitimate help destinations. At that point it overviews and inspects negative buyer reports and surveys of legitimate help sites. At last, it introduces the investigation of how laypeople scan for assets to determine a legitimate issue, how they scout and asses lawful help administrations on the web, and their input on which existing lawful help locales they consider to be the most usable, the most dependable, and the most profitable. This information is valuable to propose new prescribed procedures about how these tech-based administrations can best serve laypeople, as far as convenience, nature of administration, and insurance of the clients' advantages. It likewise affirms the significance of the Internet as a lawful help administration and features the requirement for more innovative work on better online lawful help locales that fit laypeople's needs and inclinations.

**Keywords**—Case Handlers, Case Suppliers, Representatives

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## Application-aware big-data deduplication in cloud computing

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**Abstract**— Cloud storage has been widely used because it can provide seemingly unlimited storage space and flexible access, while the storage resource is vulnerable to the cost issue since the data should be maintained for a long time. Data deduplication techniques make sure that only one distinctive instance of knowledge is maintained on storage media. In this paper, we discuss the benefit when a deduplication technique is adopted to the cloud storage, then we propose a deduplication framework for cloud environments. The deduplication application divides a given file into smaller chunks, then searches the index table that consists of hash values of chunks to judge duplicate data, finally stores non repeated chunks.

**Keywords**— Deduplication, MD5, Cloud, Hash

## CYBER PATROL – A CYBER BULLYING SOLUTION

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**Abstract**— Bullying has many forms like invalid criticism, intimidation, false allegations, bantering, humiliation or unnecessary written warnings. In this age of connectivity cyber bullying exists at workspace and even in schools or colleges. We have a simple yet effective solution, which we provide by the means of our platform. Administration or a cautionary oversight is all that's required at times to prevent an individual from going down the wrong path and in this belief that we provide the concerned parents or some representative peer an automated management system to watch over the day to day communicate by providing remote access. This is a survey of facts and figures, using which we will implement data analysis and analytics techniques to effectively extract useful insights. These insights help us assimilate the depths of the problem domain. Using this information, we will effectively counter cyberbullying in all its various forms.

**Keywords**— Cyberbullying, Automated System, Data Analysis, Data Analytics

## An Efficient Cluster Analysis of Cyber Crime Records using R

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**Abstract**— Cluster evaluation divides the records into groups which can be meaningful and beneficial. It's also used as a start line for different functions of information summarization. This paper speak some very fundamental algorithms like k-means, Fuzzy C-method, Hierarchical clustering to give you clusters, and use R information mining device. The outcomes are examined at the datasets specifically on-line news popularity, Cyber Crime information Set information evaluation. All datasets became analyzed with specific clustering algorithms and the figures we're displaying the running of them in R information mining tool. Each set of rules has its specialty and antithetical conduct.

**Keywords**— K-means algorithm, Fuzzy C-method algorithm, Hierarchical clustering algorithm, R tool.

## Web Based College Information Management System

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**Abstract**— Technological advancements are happening at the speed of thought, and technology plays a vital role in all fields, including education. College Information Management System (CIMS) provides an easy interface for maintenance of student data. It may be utilized by academic institutes and faculties to take care of the records of students easily. Technology is a huge contributor to the well-being of human kind. Reports are an integral part of schools but generating it manually in a shorter span of time is very hectic and often prone to calculation errors. The creation and management of correct, up-to-date data concerning a student's academic career and faculty details is critically vital within the universities. This system deals with all kinds of student, faculty details and academic reports. It tracks all exam details, internal and external marks which is available through a secure online interface embedded in the college's website. It also facilitates the activities happening in the university.

**Keywords**— Student Information System, Database, Excel Sheets, HTML, JSP

## Survey on Enhancement of One Time Password as a Service (OTPaas)

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**Abstract**— the traditional way of authenticating a user via Username and password is very much popular in digital world, where as for more security OTP is used, One Time Password is the technique which is two way authentications. This OTP technique can be used as service is cloud to users as One Time Password as service, in OTP as a cloud service some of the cloud service providers will provide this OTP for different cloud users for their online application login and website authentication. Cloud users can register their different web applications in the different cloud service. This will enable for this users access for accounts using OTP verification without maintaining many other passwords and several OTP accounts. In this paper author has given architecture for secure, privacy-friendly and trusted OTP provider and authentication phases are given. The purpose of doing survey of One Time Password as Service is to understand the need on one time password as service for authentication its fundamentals along with drawbacks of different authentication

**Keywords**— One Time Password (OTP), Authentication, Cloud, Two-factor Authentication, Multi-factor Authentication, cloud based OTP, cloud-based authentication service.

## Mobile Charging On Coin Insertion

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**Abstract:** The coin based mobile battery proposed in this paper provides services to rural where grid power is unavailable for large duration to charge their phones. Installation of battery charger is quick and easy.Urban population uses advanced technological mobile that have batteries with higher storage, while people in rural cannot afford such expense. Sources are direct power grid and solar energy respectively in rural areas.

**Keywords:** Microcontroller, UART Serial Channel, LCD, In-System Programmable.

## Preventing Privacy leakage of photo sharing on online social Networks

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**Abstract—** Photograph sharing is a tempting feature which popularizes online social networks. Unluckily it might liberate user's secrecy if users are agreed to post, tag, comment, mention a photo publicly. In this paper we address this problem and learn the case when a user posts a photo having individuals excluding herself/himself. To stop the security dropout of a photo we plot a system that permit everyone in a photograph be alert about the photo uploading action and join in the judgment of photo uploading activity. To achieve this motive FR system needed which identifies individuals in the photograph. Anyway requesting extra security can restrain the quantity of photos freely accessible to prepare the Face recognition technique. To control such problem proposed system endeavors to utilize user's personal photos for outline a individualized Face recognition system specifically made for distinct probable photo co-possessor with covering their secrecy. We evolve a distributed consensus system to minimize the computational miscellaneous and defend the personal instructing data.

**Keywords**—online Social networks, photo secrecy, FR system, support vector machine, collaborative learning

## Android Attendances System Using Wifi

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**Abstract—** In the recent years, many companies and organizations are using traditional biometric attendance system for taking attendance of it's workers or employees. This will keep track of employee's attendance i.e he has logged into the office or not but it will not keep track of whether the employee is present at the workplace or not. In this modern era, it is seen that after giving attendance many employees fly away from their workplace to escape from doing work. This paper focuses on Android Attendance system where an Android device will be used instead of Biometric Attendance System. Here, the entire workplace will be a wifi zone. An android application will be developed in java and android and installed into employee mobile phone which connects to wifi whenever the employee enters the wifi zone. So connection or disconnection of mobile phone to the wifi will determine whether the employee is present in the workplace or not.

**Keywords**— Server,wifi,android attendances,admin,mobile phone

## Secured Data Sharing in Clouds

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**Abstract** - Cloud cache is a use of mists that release associations from developing administrative information stockpiling frameworks. Be that as it may, distributed storage offers ascend to security concerns. If there should arise an occurrence of gathering shared information, the information faces particular cloud and ordinary insider dangers. Protect information distribution in a gathering conflict inside dangers vindictive clients is an essential analysis problem. We propose this system, which gives: 1) info hiding and trustworthiness; 2) get to control; 3) info distribution without utilizing register serious reencryption; 4) internal danger security; and 5) forward and in reverse access control. The Secure information partaking in cloud approach encodes a folder with a key with solitary encryption. Two diverse key offers for every client are created, with client just having one offer. The ownership of a solitary offer of a key enables this strategy to counter the insider dangers. The alternative key offer is put away by a confided in outsider, which is known as the cryptographic server. This philosophy is relevant to customary and portable distributed estimating situations.

**Keywords-** Access control, distributed computing, abnormal state Petri nets, displaying, Satisfiability Modulo Theory, Scyther, confirmation.

## Private Web hosting for Confidential Data using Cloud

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**Abstract**— Private web Hosting for Confidential information is a web application is mainly designed and developed to focus on cost management of various distributed cloud computing administrations and models that are utilized by business stages like DevOps/IT Organizations for using the web service like storage. In a distributed computing approach cost depends on measure of information stockpiling and hour of upkeep so cloud service provider will fix the expense for User information. In our application the cost of information will vary from text, picture, video. Assume the user will upload image to the cloud, the service cost of image is higher when compared to text .The application also focuses on the key aspect of the application that is pay per use of the service the payments are done only for the resources that are utilized at specific duration by the user where overcoming the major drawback in the models that were designed earlier where the users had to take either the yearly plan or the monthly plan but now we have an advancement i.e. pay per use which is a major change that has been implemented in this application. The user can store possess information in distributed storage zone. They can see distributed storage information whenever from any place subsequently making it best and convenient application. The User should pay for the storage cost just which is having incorporated capacity and propelled security turns out to be progressively solid. This administration has just been fused of utilizing such administrations in numerous IT, business divisions for expansive capacity of business confidential information and completely annulling the future crisis with incredible administration and security.

**Keywords**— Centralized Storage, Confidential, Cloud Computing, Web Host, Storage.

## Information Gathering and FootPrinting Framework for Penetration Testing using Shell Script

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**Abstract**—now a day's Cyber threats are the costliest threats happening globally. Lets assume a scenario where a user surfs the internet, share files, download files, upload files without any basic security precautions. In this case he/she can get infected with virus and also shares it in form of physical drives or any upload of file, this will also infect other end users. To prevent this stuff in the organisations they conduct a monthly or quarterly security audit which will help them to maintain their systems secure.

**Keywords-** Cyber threats, Security, Security Audit

## Data Security in Cloud Computing: A Survey

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**Abstract**— Cloud computing is increasing its importance due to the services and IT resources provided by the cloud service providers. There are numerous advantages in cloud computing like highly scalable, low cost and high availability. But the data security and privacy is a major concern in cloud computing. Sharing the resources and storing the data in cloud is the major application in cloud computing. To protect the data in cloud, against unauthorized access, modification and denial of service etc. The biggest challenge in cloud is storing and sharing the sensitive data. In this paper, we have discussed symmetric algorithms, asymmetric algorithms, hash algorithms for security purpose and comparison of algorithms for securing data in different deployment models of cloud. In symmetric we have discussed AES, Fully Homomorphism Encryption, Blowfish, GLEnc, and asymmetric algorithms are DIFFE-HELLMAN, QKD-NAE Technique, RSA Cryptosystem and Identity Based Encryption. In hash few of the algorithms that has been discussed in this paper are MD5, SHA.

**Keywords**—Cloud Computing, Data Security, Symmetric Encryption, Asymmetric Encryption, Hash function

## **Dynamic SLA Management from a Cloud Consumer Perspective: Issues, Challenges and Next Steps**

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**Abstract**— Cloud Consumers and Cloud Providers represent the key stakeholders in the Cloud Computing world. While Cloud Providers, provide the infrastructure, service and QoS, Cloud Consumers need to access those services to fulfil their user needs. This paper looks at the challenges Cloud Consumers face w.r.t Managing, Monitoring, Alerts, Penalties, Viewing the Policy Changes w.r.t SLA's. Currently there are very few tools and mechanisms that help Cloud Consumer to get this data. This Paper proposes different solutions, a. Directly by Cloud Provider, b. By a Agent via Cloud Provider, c. By an Agent with less interaction from Cloud Provider. This paper presents best solution i.e. By an Agent via Cloud Provider and also provides suggestion to develop a web interface tool that covers the entire SLA Life cycle.

**Keywords**— Cloud Consumer, Agents, SLA, Dynamic SLA, Cloud Providers, QOS

## **Eatery Management System**

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**Abstract**—We plan a self-organization mentioning centre including its item and hardware. It demonstrates the taste and expenses of the sustenance for customers to incorporate their solicitations. The traditional sustenance undertaking the official's mode, remote self-organization mentioning the board information structure comprehends the intellectualized and informationalized diner the board. The structure thus completes data tolerating, limit, show and examination. The structure (Eatery Management System) outfits with various ideal conditions as uncommon versatility, minimization, etc, and has a for the most part spread of use prospects. Hence, we propose to construct a product venture that can proficiently deal with and oversee different exercises of an eatery and every one of these exercises will occur under the supervision of the manager. The organizations in eateries are presently developing continually. In the meantime, the requirement for dealing with its activities and undertakings emerges. The most ideal approach to advance these exercises is developing the business online too. The present age energizes cutting edge benefits particularly over the Internet. Consequently, the task is grown capably to help eatery proprietors mechanize their business activities. This task serves the most ideal method for keeping up client's data and provides food their necessities. The best advantage of maintaining a database for eatery is the any details regarding the eatery like branch details, or food menu or number of customers visiting the eatery and their review and also the details regarding the staff like the staff designation etc can be retrieved or searched very easily instead of manually checking them since retrieving takes very less time and is easy while manually doing the same takes more time and is also difficult as well.

**Keywords**- Eatery Management, Menu, table booking

## Approaches to Automated Detection of Cyberbullying: A Survey

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**Abstract**— The Study into cyberbullying identification has expanded as of years, due to some portion to the multiplication of cyberbullying crosswise over internet-based life and its adverse impact on youngsters. An emerging collection of work is rising on mechanized ways to deal with cyberbullying identification. These methodologies use machine learning and natural language processing techniques to distinguish the attributes of a cyberbullying trade and naturally identify cyberbullying by matching textual data to the identified traits. Based on our general literature review, we arrange existing methodologies into 4 primary classes, (a) Supervised learning-based approaches typically use classifiers such as SVM and Naïve Bayes to develop predictive models for cyberbullying detection. (b) Lexicon based systems utilize word lists and use the presence of words within the lists to detect cyberbullying. (c) Rules-based approaches match text to predefined rules to identify bullying and (d) mixed-initiatives approaches combine human-based reasoning with one or more of the aforementioned approaches. We discovered absence of value agent named datasets and non-holistic thought of cyberbullying by study when creating location frameworks are two key challenges facing cyberbullying detection study. This paper basically maps out the best in class in cyberbullying discovery research and fills in as an asset for specialists to figure out where to best direct their future research endeavor's in this field.

**Keywords**— Machine Learning, Natural Language Processing Techniques, SVM, Navie Bayes

## Digital REVA – A Paper-free Security Solution

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**Abstract**— The administrative department of any residential college has one major concern, i.e., the safety and security of their students. This is due to the fact that students from all over the country leave their homes to pursue a good education in the college of their choice, leaving their parents anxious about their safety. To ensure the security of hostellers and put their parents' mind at ease, our team came up with a solution which is to digitizing the entire permission process in such a way that the usage of paper is completely eliminated and the involvement of the warden is minimized. "Digital REVA" is a paperless venture which uses a website that allows hostellers to seek permission digitally. The request is received as a notification (SMS or e-mail or simple login) by the respective parent who can respond to it in a stipulated time period. Following this, a QR code is generated which represents "Permission Granted" or "Permission Denied" based on the parent's response. The QR code is scanned at the security gate and the data is stored in a database.

**Keywords**—Safety, Security, Hostellers, Warden, Permission, Digitizing, QR Code

## Android Accessibility Service : Bane or Boon

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**Abstract**— Android is a huge platform available to a big audience. However, android is vulnerable to many attacks and attackers. Which violates the privacy and security of the data. This paper mainly focuses on demonstration of how accessibility service can be used to key log the events and send it to the hacker's device using firebase (Real time database). This is a major vulnerability which needs to be addressed. The payload is installed as .apk file and some social engineering to convince the user to enable accessibility service. Our study estimates that this attack will work on most of the android versions.

**Keywords**—Android Accessibility Service, Firebase, .apk , Payloads , Android Vulnerabilities.

## **Blockchain Enabled E-Voting System**

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**Abstract**— Innovation impactly affects that the numerous parts of our public activity. Structuring a twenty four hour comprehensively associated plan enables simple access to a scope of assets and administrations. One main such troublesome development is the Blockchain a keystone to cryptocurriences. One potential utilization of the Blockchain is in e-voting plans. The target of such a plan is given a decentralized design to run and support a voting plot that is open, reasonable, and independently variable. In this paper, we propose a potential new e-voting convention that uses the Blockchain as a straightforward polling booth. The convention has been intended to hold fast to crucial e-voting properties just as to offer a level of decentralization and to taken into account the voter to change/update their vote. This paper features the advantages and disadvantages of utilizing Blockchain for such a proposition from a reasonable perspective in both the structure advancement and the utilization settings. Finishing up the paper is the potential guide for Blockchain innovation to have the capacity to help the complex applications. The Blockchain innovation is displayed as the distinct advantage for a significant number of the current advancements.

**Keywords**- Blockchain, E-voting, Ganache, Solidity, Metamas

## **Dynamic Resource Adaptation In Cloud Computing A Contribution**

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**Abstract**-The need for the cloud resources is increasing and with increase in demand the cost of these resources is also increasing. Cloud environment gives the flexibility of utilizing the resources as per the need and the customer would pay for his usage. The consumer need not invest on the resources and thereby the cost of investment is drastically reduced for the consumer. But since the demand for the cloud resource is increasing, the cost is rising high. This can be reduced with an approach as proposed in this paper. This paper mainly focusses on the optimal way of resource adaption and hence reduction of cost and power consumption. Based on the analysis, there are some open challenges for the optimal resource adaptation. The resource's idle time is utilized by other consumer in need and hence reduces the cost and power consumption. This can be achieved by adopting k-means algorithm initially to segregate the different kinds of resources, then the idle time is calculated with time and at what time using some of the prediction algorithms. The idle time of the resources is then distributed using algorithms such as round robin, FCFS etc.

**Keywords** - Cloud, Resource, adaptation, machine learning

# **Adfence**

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**Abstract-** **AdFence** is a location based android application that uses geofence technology for product advertisement. The application is based on the geo-fencing technology to deliver location-based services to the users. The application is basically aimed at advertising using the google maps by creating and setting a geo-fence of certain radius. A user can register a geo-fence (area of advertisement) on the map in the application. The geo-fence is characterized by the events in its entry, exit and inside of geofence section. Whenever a user enters or exits a particular geo-fence a series of event or activity triggers can be alerted to the user via the application. The user as an advertiser must set a geofence of a particular radius on the google map in the application. The geo-fence must be provided with the details of its category (Shopping, Restaurants, Medical etc...). The user as a normal user can discover geo-fences on the map during his free roam. The user is expected to set the preference category of interest to be discovered on the map. Once the user enters a particular geo-fence of a selected category a notification of the details of the advertiser and the services offered is displayed on the application. This project is an attempt to improvise and enhance the advertisement system using the geo-fencing technology. The data generated through the application can also be used to study the various factors affecting the market trends, customer survey, advertisement behaviour and user preferences. It can also be used to predict the change in the market trends and customer-retailer interactions in the future and also come up with the solutions to tackle the ever changing markets. This application can also be utilized in an emergency situation. In case of a disaster, hazard situation or road accident, the privileged user (such as a government or verified personnel) is given an option to signal the event on the map as a beacon signal to notify the people about the situation. This helps people to be aware of their surroundings and act accordingly to the situation they encounter.

**Keywords:** Geofence , Offers notification, Shops are Alerted using GPS.

# **Indian Sub-Continent Risk Game**

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**Abstract**—“Indian Sub-continent risk game” is a turn based strategy game that is developed using a more sophisticated probabilistic reasoning based on Artificial Intelligence. The game has two AI players which has been programmed in a greedy manner. The game we have created has a good AI which is easily understandable and intuitive. To give an authentic feel, this game uses the map of ancient India and historic names for the regions. The dice rolled decides whether the battle is either won or lost. This game can be played against 2 AI players or against human players. The game is developed using Python’s pygame library which has features for basic game development. The user interfaces includes animations like dice being rolled and striking out each other, sound effects for celebration, victory and defeat. In turn based games such as Risk it is important to keep the users attention while the AI is playing its turn, to prevent the user from becoming impatient.

**Keywords-** Turn-based-game, strategy-games, probability, dice-rolls, world-domination, Risk, Artificial Intelligence

# IOT, WSN, NETWORKING

# **QoS Routing Based on Available Bandwidth for Mobile Ad hoc Network**

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**Abstract**— Mobile Ad-hoc network is a self configuring wireless network. It does not have any fixed infrastructure. Mobile node can leave and join the network. Therefore network topology changes any time. In Manet hosts can work as a router and forwards data from initiator to receiver. Due to shared wireless channel and dynamic topology, providing quality of service (QoS) is a challenging task. QoS routing can find optimal routes that supports QoS requirement based on the received information during route discovery process. If QoS requirement cannot be supported, the admission control mechanism reject incoming request. Bandwidth estimation is a technique to determine available data rate on a route in the network. The term bandwidth means data rate not the physical bandwidth in hertz. QoS routing is required because most of the real time applications depend on the network's condition. QoS in terms of bandwidth ensures transmission of real time data. In this paper a new bandwidth estimation technique EAB (enhanced available bandwidth) is proposed. The performance of EAB is compared with AODV. The performance of EAB is better than AODV in terms of bandwidth.

**Keywords-** QoS Routing, Active Technique, Passive Technique, Bandwidth Estimation, Admission control, Manet.

# **Study On Various TCP Variants of Reactive Routing Protocols with Their Performance Analysis**

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**Abstract**— MANET is a continuously self-configuring, in infrastructure less network of mobile devices where they are connected wirelessly. TCP protocol which is a reliable protocol, which is widely developed for wired networks. TCP protocols have different TCP variants to detect and control congestion in the network. However, all these variants do not succeed in showing similar performances of controlling congestion in MANE. In this paper, we analyzed the performance of three main congestion controlling TCP variants such as NEW RENO, SACK and VEGAS in AODV (Ad-hoc on demand distance vector) and DSR (Dynamic source routing) reactive routing protocols. File Transfer Protocol (FTP) application is used to provide network traffic between nodes. Different scenarios are created and the average values of each performance metrics such as Jitter, Throughput, and Packet drop and end-to-end delay are used to evaluate the performance.

**Keywords**— Congestion Control, NEW RENO, SACK, VEGAS, DSR, AODV

## Smart Monitoring System for Swach Bharat

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**Abstract**— The objective of this project is to monitor the waste management system. The new era of web and Internet of things paradigm is being enabled by the proliferation of various devices like sensors, GSM modules and LCD displays. A smart device is embedded in the environment to monitor and collect all types of information. In this project, we specifically focus on the adaptation of smart device as a key enabling technology in contemporary waste management. We use sensors like MQ2, MQ3, fire, Load and IR sensor to detect smoke, harmful smell, fire, weight and the level of garbage in the large dustbin (one big dustbin for a community in that area or one for a building) which collect garbage from that locality or building and send a message through GSM module.

**Keywords**— SST MC, IRSensor, MQ2, MQ3, Fire sensor, Load sensor, LCD display, GSM module.

## Camouflage Surveillance Robot

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**Abstract**—Nowadays, many expenses are made in the field of defense in adopting primitive security measures to protect the border from the trespassers. Some military organizations take the help of robot in the risk prone areas which are not that effective when executed by army men. These Arm robots are confining with the camera, sensors, metal detector and video recording, and the main objective of our system is to get camouflaged including some additional parameters like ZigBee wireless module for real time data processed by the camera at the video, audio and PIR sensor to trace the intruders. Here, we are coming up with new technology to overcome connectivity range when the arm robots are out of range through ZigBee modules.

**Keywords**—Camouflaged, Connectivity, Security, Detection, Identification, ZigBee-Wireless

# Prevention of Theft of Sandalwood trees using IOT and Arduino

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**Abstract**— With the advancement in the technology and increasing dependency of humans on smart devices, with the rising concern for security systems available to the society in day to day life, it has become very important to have a technology which can monitor and protect the green cover in our society using IOT. Our paper ‘Prevention of Theft of Sandalwood trees using IOT and Arduino deals with embedded technologies which employs the embedded block and script programming for Arduino in this paper we present an efficient solution to safeguard sandalwood trees which are the pride of our society. The sensors used here will be interfaced with Arduino. The safety statistics of sandalwood trees will get uploaded to a cloud platform through wireless module which can be monitored easily by the concerned forest official who can also enable and disable the sensors. The accelerometer depends on the vibrations to control the signals. Our proposed system will link the leading technology to bring the features of security to completely safeguard our precious Sandalwood trees present in our environment.

**Keywords**— Arduino, vibrational sensors (embedded accelerometer), microwave transmission, Internet of Things (IOT), Global positioning System (GPS)

## Emission Detection Using RFID Technology

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**Abstract**— The target of this venture is to screen air pollution on the streets and track a vehicle which causes air pollution. So as to accomplish this, numerous nations in the world have displayed a progression of outflows measures, in the interim a few strategies have been created, including update engine motor or improving the nature of the fuel. But these activities have not realized a striking impact in controlling the contamination. In this framework, Radio Frequency Identification (RFID) technology is used and to implement this technology, the remote specialized technique is embraced to gather and transmit emission data of vehicles. The utilization of the Internet of Things (IoT) to keep track of vehicles that pollute is proposed. In addition, the RFID gadgets should be introduced on the traffic lights with the goal that emissions signals from a vehicle can be cross-examined when the vehicles stop in the junctions. By applying the framework, the amount of air pollution that is being caused by vehicles can be reduced.

**Keywords**—Internet of Things; Radio Frequency Identification;

## **Effectiveness of Teaching and Learning CPU Scheduling Algorithms: A Survey**

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**Abstract**— CPU scheduling algorithms are integral part of learning operating system. Over the years, it has been experience that initially CS students face a lot of problems in understanding and further implementing the various Scheduling algorithm. Also generating and regenerating Gantt Charts is faced with difficulties by many CS students. However, teaching and learning CPU scheduling algorithms using conventional lectures and textbooks is faced with difficulties by many students. First, textbooks illustrate the CPU scheduling algorithms in an incomplete and unclear manner. Second, students solve problems manually. They don't receive any immediate feedback on their solutions. Third, due to time restriction, the teacher has to select a few small problems. To overcome these problems, this can be used as an efficient tool for teaching and learning CPU scheduling algorithms. The tool is also capable of doing calculations different effectiveness criteria of an algorithm like waiting time of each process, average waiting time and turnaround time.CPU utilization and system throughput.

## **AWK: Arduino Wearable Keyboard**

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**Abstract**— Traditional typing methods have become quite outdated nowadays and there is a need to constantly upgrade this technology. AWK: Arduino Wearable Keyboard is an ergonomic input device which is wearable. Arduino Wearable Keyboard is a device which allows users to effectively communicate by providing various input letters present in the English Alphabet. This is made possible without using the traditional QWERTY keyboard setup; and rendering an immediate display of the output. AWK is highly effective for communication on the go, especially for people with speech disorders. The components used to meet this are Arduino Uno Board, LCD Screen, Bread Board, Push Buttons and Resistors. It makes use of these push buttons to reciprocate interactions during "key" clicks or presses to provide a response of an immediate display of a letter on given the LCD Screen; and reduce the accuracy needed in various positions of hand while typing on a traditional QWERTY keyboard. Thereby, eliminating any need for a traditional QWERTY keyboard.

**Keywords**—Arduino Wearable Keyboard, QWERTY Keyboard, Multitap, Input Language, Arduino UNO

## **IoT Based Advanced Smart Cultivation System**

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**Abstract**— Agriculture plays a vital role within the lifetime of associate degree economy. It's the backbone of our financial system. Agriculture not solely provides food and stuff however additionally employment opportunities to a really giant proportion of population. The manual assortment of information and human intervention within the field is labor intensive. Automation of information assortment at regular and frequent interval reduces labor demand and price. The aim of this work is introduce a system to gather field knowledge at regular and frequent interval and to scale back labor with the assistance of ESP 32. It is a IoT based system for effective assortment and method. The method is tested in the field considering various parameters. It works efficiently in all environmental condition and variation of parameters such as soil moisture, temperature, and humidity. This process is very economical and price effective crop yielding.

**Keywords**—IoT, Automation, ESP32, Process all knowledge, Information transfer, cost effective, reduce labor.

## **Implementation of IoT System using Block Chain with Authentication and Data Protection**

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**Abstract**—Technologies are growing day-by-day. Among the developing technology we are developing a system with internet of things (IOT), block chain, and Near Field Communication (NFC) for providing data protection and authentication for android applications. In this paper we are using zero knowledge authentication system to login into android APP using hashing technique along with NFC. The data generated in android APP are transferred to block chain server which convert the transaction details into blocks and store it in Blockchain storage. With the help of all these technologies we are providing more data protection and unbreakable authentication system.

**Keywords**—IOT, Blockchain, NFC, Android Application.

## Body Sensor Networking

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**Abstract -** The objective of this project is to monitor the patients remotely. In this new era of IOT there are many technique with which we can do so many things with the help of various devices like sensors, GSM modules and LCD displays .The internet of things is one of the best Smart technology in this new era with which we can connect internet into physical device and can do various activity. We can also collect all types of information. This leads to the effective framework. Recent approach in wireless sensor networks have facilitate the cognizance of pervasive health care monitoring system for patients. In this project, we propose a off the beaten track medical monitoring system for heartbeat, blood pressure, ECG, and temperature data. Monitoring centre is a station which consist of real time analysis and warning mechanism for emergency diagnosis .We are using sensors like heart beat sensor, blood pressure sensor, microcontroller Lpc2148, an temperature sensor to detect the abnormalities in the human body and send a message through GSM module and also give alarm during emergency .These all can done using mobile application with the help of sensors. We use embedded C which is a very easy coding language to write the code and install it in the Arduino. We also use the LCD display to show the message.

**Keywords-** Microcontroller Lpc2148, Temperature Sensor, Blood Pressure Sensor, Heart Beat Sensor, ECG Sensor, LCD display, GSM module, Embedded C, Arduinio, Wi-Fi module, Mobile application.

## Recognizing Mouse events through Head/Hand movement

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**Abstract—** Humans communicate with one another not solely through their vocal talents however additionally through the gestures that they create. A gesture will go an excellent approach in golf shot through our purpose and creating the opposite person perceive U.S. and computers are not any totally different during this and may be controlled and created to retort handy and head gestures employing a gesture recognition system. during this project a gesture recognition models is meant that acknowledge hand or head gestures that's down ,up, left, right and cross, supported the signal from three-axis measuring device. Mouse management supported Gesture entomb action takes advantage of continuity and dynamics of the user's movement of the hand to regulate the mouse movement. Once there's any movement of the body there's generation of signal however common supply is face or hand. This project presents the maneuver of mouse pointer and performs numerous operations like left click, right click, double click and gap and shutting a folder by blinking your eyes. Recognizing gestures may be advanced task that involves several aspects like motion modelling, motion analysis and pattern recognition. Therefore for recognizing the gestures numerous mouse events are performed.

**Keywords—** Gesture Recognition System (GRS), Three-axis accelerometer, Head Gesture

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# **Implementation of IoT Framework Utilizing Blockchain with Validation and Information assurance with NFC Innovation.**

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**Abstract**— In a square chain IoT condition, when information or gadget confirmation data is put on a square chain, individual data might be spilled through the verification of-work procedure or address look. In this paper, we apply Zero Knowledge confirmation to a savvy meter framework to demonstrate that a prover without uncovering data, for example, open key, and we have contemplated how to upgrade secrecy of square chain for security insurance. In this paper, we present a simple to-utilize NFC-based arrangement approach for IoT gadgets that is verified by fitting safety efforts in programming and equipment. Since modern utilization of such a setup approach involves unexpected necessities in comparison to home use, we present and analyze three unique design forms. The relevance of our methodology is exhibited by two prototypical executions, just as an itemized security investigation. We additionally demonstrate that the forced overhead because of the actualized safety efforts is immaterial for most setup refreshes.

**Keywords**—Component Near Field Communication, Zero Knowledge Technology, Service Provider.

# **Developments in Cognitive Internet of Things and its Application in Smart Cities**

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**Abstract**—The recent evolution of IoT being ‘Cognitive Internet of Things’ (CIoT), which is an intelligent automation applicable in a variety of domains. Developing IoT as CIoT can result in as self-reliant without human intervention to function in an intelligent way of decision making to optimize tasks is the sole objective of CIoT aim and purpose. Worldwide urban population is expanding that result in various resources crunch, which hampers sustainable living particularly for urban inhabitants. The urban resources are vital and also critical due to supply and demand mismatch and for sustainable inhabitation, application of IoT/CIoT is relevant as many resources like water, transportation, power, health, housing, education, etc., become scarce for sustainable inhabitation. The paper encompasses by briefing the development and advances of CIoT, specifically its significance in smart cities applications. The CIoT can be trained in taking decisions on par with humans in case of critical situations to find the remedial measures required, which makes the process smart, useful, cognitive for intelligent solution. The properties, characteristics and constraints of CIoT are briefed along with its business applications. Discussion and conclusions are drawn in highlighting the emerging innovation of CIoT, which can become a revolutionary concept in futuristic world of technological novelty in transforming the world as dynamic and smart for the benefit of all the stakeholders.

**Keywords**— CIoT, Smart Cities, WSN, Machine Learning, Automation, Data Analytics, RFID Technology

# Wide Area Disaster Management System Using Mobile Intranet

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**Abstract**—On the occasion of a large-scale disaster, sharing of information functionality with everyone is important. However, there were many cases where information sharing was not actually well functioned because the disaster information network infrastructure did not consider the system failure when the disaster happened. In our findings, we focus on the fact that the disaster management systems are operated on each local area. The system redundancy is realized by sharing the system resources and integrating the disaster information into a large disaster system while decentralizing the system and network loads. And, the system failure can be recovered by introducing system failure detection function for server failure and link disconnection and dynamically reconstructing the network system. In order to verify the usefulness of the suggested method, we constructed a nationwide, disaster information network prototype system over Japan Gigabit Network (JGN2), implemented Wide-area Disaster Information Sharing system (WIDIS) and evaluated its functionality and performance.

**Keywords**—Japan Gigabit Network (JGN2), Wide-area Disaster Information Sharing system (WIDIS).

# BMTC E-pass Application

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**Abstract**— Bengaluru Metropolitan Transport Corporation (BMTC) is a prominent public transport service provider in Bengaluru. It makes commuting favourable and cheap compared to other modes of transport within the city. The organization enhances its services by analyzing passenger demands and providing them the necessary services. BMTC working model is coagulating with information technology in terms of ITS (Intelligent Transport System-Global Positioning System [GPS] enabled buses, electronic ticketing machine [ETM]). In spite of these advancements, it charges its service fares through paper tickets and passes which need to be purchased by paying cash. In the Digital era, technological solutions pave the way for digitizing mechanisms for traditional methods or problems and synchronizing information in real-time. These paper pass which proves to be beneficiary for passengers are being misused by means of transferring, reusing the day pass when there is lack of inspection. We have designed a solution to overcome misuse and also to encourage digital transaction for a cashless economy. The solution is mobile application electronic pass (e-pass).

**Keywords**— Android Mobile Application, BMTC, E-pass, QR code, Digital Payment.

# **Tree based Data aggregation algorithm in wireless sensor networks**

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**Abstract-**Wireless sensor network is a cluster of various sensors, which has capability of sensing and communicating the data collected. Effective and efficient data aggregation algorithm in Wireless Sensor Networks (WSNs) can increase the lifecycle of the network by bringing down the communication of unnecessary data and make the security of the networks better. The conventional data aggregation algorithm in WSNs predominantly aims to raise the level of energy utilization, and pay no heed to security and lifecycle. We propose a data aggregation algorithm by constructing a data aggregation tree to deal between energy utilization and lifecycle. The algorithm extends the duration of lifecycle by reducing the maximum energy consumption by the nodes. In scheduled data aggregation, selected communications are accounted to deal between low weighted delay and high network lifecycle. Simulation results shows that the proposed algorithm utilizes less energy for aggregation of the data from the sensor nodes, and hence increases the lifecycle of the network.

**Keywords-** Wireless Sensor Networks, scheduled data aggregation, tree based data aggregation tree.

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# **Android-based IoT Platform Environment and Permission Management**

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**Abstract—** The Android-supported IoT(Internet of Things) stage simply same the recent Android application provides an condition that makes it easy to use Google's uses framework administrations includes advancement method and APIs used through which it controls and support the different sensors of a IoT gadgets. Applications used on the Android-supported IoT are frequently User Interface are available free and are used without knowing the client's agree to enlisted authorizations. It is difficult to find the solution on the misuse of consents just as to check them whether they are registered while upgrading any applications. In this paper breaks down the renditions of previously and after an application the update application running on the Android Application on different stage and the collected consent records. It intends to find the similar authorizations when the update, and erased and recently included authorizations after the any update were distinguished, and accordingly permission and security issues that can require from the authorizations and management that not required for IoT devices to find out the specific capacities.

Keywords—Android permissions ,Management on permission, Android IoT platform, Android update, Android security.

## Smart Ordering System for fast-food Restaurants

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**Abstract**— The whole world is in love with fast food. The billions of dollars earned by fast food restaurants like Pizza Hut, KFC, Domino's, Papa John's, Burger King prove that fast food restaurants are preferred by the public people. Most people like fast food restaurants because they provide quality food in a short amount of time and also the public do not like to wait for the food they have ordered for a longer amount of time. The smart ordering system is a web-based application which enables the customer to order food at a fast food restaurant. The customer can order the food to be served at the restaurant or can order the food as a takeaway according to his wish through the smartphone or tablet or computer by simply visiting the site and ordering from the menu. The main advantage of using the smart ordering system is that less time will be taken to complete each order and the food will be served in a short amount of time when compared to the traditional ordering system. Also, less labor will be required compared to traditional fast food restaurants and the fast food companies will also generate more revenue when they incorporate smart ordering system. Also, IOT enabled technologies can be incorporated into this smart ordering system. Customers can track their order, can pay digitally by using e-wallets like paytm, Amazon pay, mobikwik, etc. Credit cards and physical money can also be paid by the customer. The customer can choose any mode of payment according to his wish. Smart ordering system provides many options to the customer regarding his choice of topping, food variety, tracking the order, feedback and also different payment options. Also, fewer waiters and servers will be required when smart ordering system is implemented. In the future year's to come smart ordering system will have a big impact on the fast-food industry.

**Keywords**—Fast-food restaurant, Smart ordering system, Smartphone, Tablet, computer, IOT

## Design of Efficient Floating Point MAC Unit for AI Hardware-Survey Paper

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**Abstract**— In real-time, all the digital signals are described using the standard IEEE floating values. The information or data that flows in the signal or which is in the signal is in the form of floating values. It is tedious or hard to process this kind of information in the signal. Hence, it is necessary to build an effective unit that basically performs simple operations in the real time by taking very less delay for computation. One such unit is designed and implemented in this work that is an effective self-timed multiplier for single precision floating values with the carry-look ahead adder using the VHDL. This multiplier performs IEEE standard 754 multiplication process on the two single precision floating values. The main usage of building or implementing such a system is that it consumes very less time to calculate the correct output of the unit. This multiplier can be widely used in all the type s of the device, be it wired or wireless. The self-timed multiplier is designed and implemented on spartan-3A FPGA board and synthesized using Xilinx 14.4.

**Keywords**- IEEE floating point, pipe line stage, self-timed multiplier, artificial neural network, VHDL.

## Online Car Rental System

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**Abstract**— The objective of this paper is to digitize the process of hiring a car by individuals with the simple use of web-page and few web featured algorithms. Since, internet is dominating the way of interaction in many fields, it can be adopted to bring change of trend in the process of renting a car. This model simplifies the work required to collect the relevant data by using certain data mining algorithm. This Car Rental System is being produced for clients so they can book their vehicles from any part of the city in a convenient manner without the necessity of client physically being present at warehouse. The system collects data from the clients through filling their subtleties. A client being enlisted in the site has the access to book a vehicle which he/she requires. The proposed framework is totally incorporated the online framework. It mechanizes manual methodology in a powerful and proficient way. This computerized framework encourages client and gives to top off the subtleties as per their necessities. It incorporates sort of vehicle they are endeavouring to contract and area. The motivation behind this framework is to build up a site for the general population who can book their vehicles alongside prerequisites.

**Keywords**—Car Rental, Online System, Car Brands, Car Type, Bookings, Booking Management, Registered users

## Passive Infrared (PIR) Sensor for Safe Agriculture

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**Abstract**—Agriculture is a cultivation of land and breeding of animals and plants to provide food, fiber, medicinal plants and other products to sustain and enhance life. Agriculture is a backbone of India, Which provides employment opportunities for rural peoples on a large scale in under developed and developing countries. To protect the crops from damage caused by animal as well as divert the animal without any harm. Due to less monitoring on crops led to the destruction in large scale .The proposed system we are developing a detector for safety measures of saving agriculture. Passive infrared radiation sensor detects the change in infrared radiation of warm blooded moving objects in its detection range and offer a warning through buzzer which makes sound due to this the field can be saved from the intruder and this signal is transmitted to GSM and which gives an alert to farmers. Arduino Uno is used to interface with PIR sensor. PIR sensors are excellent devices for wireless sensor networks being low-cost, low power and presenting a small form of factor. The proposed model we present feature extraction and sensor fusion technique that explodes a set of wireless nodes equipped with PIR sensors to track intruder moving into the field. Our approach has reduced computational and memory requirements. Moreover, this method is also designed in such a way that it lets any farmer can use this technique in a convenient way.

## **Relay Node Selection Algorithm for Energy Optimization in WSN**

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**Abstract**— In study of the routing protocol, preserving the energy consumption is one of the most imperative arguments of wireless sensor network. A sensor network consists of conglomerate sensor nodes. These various nodes are sanctioned with limited battery power. We concentrate on limited energy utilization and improving the survival of grid and also hand over the data among nodes in lone spatial sequence network. Opportunistic routing manifests that multi hops to forward the decision to enslave the potential of the grid by executing the variations between the points. Relay node selection algorithm achieves by bounding the cost of energy during the transmission of the data. The paper urges an algorithm for advancement in performance by saving the energy as a consequence with connectivity of nodes in the network when correlated amidst auxiliary routing protocols of wireless sensor network.

**Keywords**— one dimensional queue, Energy Efficiency, Opportunistic Routing, Relay Node, Wireless Sensor Network.

## **IoT based Smart Card Pollution and Traffic Control System**

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**Abstract**—In today's world, the urban mobility is one of the major problems, especially in metropolitan cities. Improvisation is required in existing traffic management systems in order to manage it efficiently. One of the primary complications among Indian cities are that the existing infrastructure cannot be expanded more. Poor and fragmented mobility has been considered a key contributor to Congested Traffic. Widening of Roads, making Flyovers, increasing public buses are not the only Solution for these challenges. Hence, we propose a smart card (RFID) based pollution and traffic control system, which has been implemented using Arduino Uno R3 along with RFID module interfaced with standalone application built over JAVA platform.

**Keywords**— Traffic management system, congested traffic, RFID, Aurdino Uno R3, JAVA.

## **Smart Helmet using IoT**

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**Abstract**— IOT has enabled us to connect our day to day devices in a network for a sole purpose to exchange data. Today a number of countries have made it mandatory to wear helmet while riding. In this paper, we propose to build a smart helmet system that can be installed on a bike and enforces that the biker first wears the helmet and also the sensors detect alcohol in breath of the biker and bike does not start in case the biker has not worn the helmet or is drunk. The implementation of this system is proposed to be done using NodeMCU which is an open-source firmware and development kit that helps to prototype or build IoT product. We use firmware which runs on the ESP8266 Wi-Fi SoC from Espressif Systems, and hardware which is based on the ESP-12 module. The firmware uses the Lua scripting language. It is based on the eLua project, and built on the Expressif Non-OS SDK for ESP8266.

**Keywords**—IOT, Pressure Sensor, Tilt sensor, GPS , Smart Helmet, Wearable Technology

# Inference of Gene Regulatory Networks for Prostate Cancer using Bayesian Networks with Feedback and FeedForward Loops

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**Abstract**— The solution to any problem depends on the depth of our understanding of it. Cancer is a disease that is being investigated at multiple levels and from multiple perspectives to understand the details of its origins and expansions in order to be able to figure a cure for it. We can now computationally analyze the biological data produced by genome analysis techniques like genomics, proteomics, and transcriptomics. DNA micro array technology has made available large gene expression datasets for entire genomes. It has been clinically observed that inside a human cell, activity of a gene often turns on or turns off one or more other genes. Such relationships in the co-regulation of genes is captured by gene regulatory network models which are computationally constructed from gene expression datasets. It has been observed that healthy and diseased states of a human cell show different regulatory interrelations between genes. In this paper, we have proposed to use a stochastic approach called Bayesian Networks with Feedback and Feedforward loops for inference of inter dependence in the regulation of genes in case of Prostate Cancer. It was observed that 4 of the networks revealed by the proposed approach matched the ones observed in clinical studies.

**Keywords**— Computational Genomics, Reverse Engineering, Gene Expression Data, Gene Regulatory Network, Stochastic Approach, Bayesian Networks.

# Smart Irrigation using GSM Module and Microcontroller

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**Abstract**— Agribusiness assumes a noteworthy job in our everyday life. In this paper, a review has been done about the run of the mill horticulture techniques utilized by ranchers nowadays and what are the issues they face. Ranchers face serious issues in watering their harvests underneath watering framework, over-watering framework that causes separating and loss of enhancement substance of soil. Also inundating water to the plant in overabundance will build the centralization of high soil content there are a few different ways to develop a solid yield however it requires a great deal of labor which is a weight these days. So as to make it a keen and self-ruling water system framework cloud innovation is being utilized. Microcontroller (MCU NODE), GSM module have been used. This strategy helps in controlling the exact state of the water dimension to the horticulture land dependent on the dampness substance and it routinely illuminates the rancher by means of SMS about the dampness substance, a rancher can likewise observe the constant dampness substance by an application installed in his phone.

**Keywords**- Cloud, Mcu node, Gsm module, Dampness , Application.

# Performance Study of IPFS over http(s) using the Multi-Cloud Platform

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**Abstract-** Recent researches have proved that existing internet protocols like HTTP have been used widely and extensively in our day to day life which has led to poor and inefficient performance of the web. This study focuses on a new network protocol that is Interplanetary File System abbreviated as IPFS. IPFS is distributed and peer to peer file system which stores files in a decentralized way unlike http as well as keeps a track of versions pretty much like Git. IPFS uses Distributed Hash Table for the purpose of routing, Merkle DAG Data Structure for establishing links between two nodes in the form of cryptographic hashes and Bit Torrent for the exchange of data in bits from different peers. These functionalities make it possible for IPFS to transfer data with high speed and reliability. The unique hash values ensure data immutability and prevents violation of data security. In other words IPFS is the replacement for HTTP which uses centralized server to download files leading to all time crashing of the server, slow internet and unreliability in all terms.

**Keywords-** Interplanetary File System, Hypertext Transfer Protocol, Merkle Dag, BitSwap.

# Crypto currency based 24/7 Online Food Ordering System

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**Abstract** - Food Industry has always been a profitable industry not only for manufacturers, suppliers, but also for the users, distributors. The online food delivery system is the need of hour because of the recent changes in the industry and the increasing use of the internet. A Real-time online food ordering system for the customer is our proposed system. Cashless payments are nowadays are becoming more popular and digital currencies like Bit coin, is not used for payments on transaction conformation. So we modified a Bit coin payment System for fast transactions. Today, we are seeing the increasing number of payments in our economy and mainly going with cashless method. In last few years' new payment systems like Google pay, Phone Pe, Paytm simplified fast and safe money exchange. These Approaches commonly rely on central trust authority for processing. Bit coin transfer is a peer-to-peer network doesn't rely on central trust but provides reliable money transfer. In this paper, we present a concept that improves the new technique of transferring money in bit coin network.

**Keywords-** 24/7 Food Ordering System, Dynamic Database Management, crypto currency wallet, Smart Phone.

## Smart Speed Limit Sign Board for Changing Weather Conditions

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**Abstract**—Digital road sign boards are an advanced solution for today's static road sign boards which are incapable of handling dynamic situations under changing weather conditions. Internet of things (IoT) technology has enabled the interconnectivity between remotely distributed devices and can be centrally monitored and controlled. These digital roads sign boards can be accessed and controlled remotely using centralized control center. The speed limit of a particular road will be updated according to current weather conditions like rain, fog etc. The proposed system has been implemented using raspberry pi, matrix display and weather API.

**Keywords**— Internet of things (IoT), raspberry pi, matrix display

## Medibox –IoT Enabled Patient Assisting Device

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**Abstract**—The health sector is one among the most important sector which must be given importance. This sector is critical part in human life due to which we must contribute a higher hand to it using IOT. This makes it important in developing an IOT device called Medibox which helps people in taking tablets or medication at right amount and at right period and tablets are dispensed according to user inputs. Medibox will help the elderly patients who usually have memory issue. This device also provide water to be taken along with the medicines which would make it easier for patients consume their medication easily. Medibox can be used by patients who travels regularly and has medications to be taken. This device also makes sure about the temperature and humidity that must be maintained for particular medicines. Medibox can be used in two modes one is online mode using a web age or offline mode using the graphical display on the Medibox. Medibox will also make sure that the medicines preserved with proper properties.

**KEYWORDS**— MEDI BOX, ONLINE MODE, OFFLINE MODE

## Research and Survey Practice for sugarcane farming using Internet of Things (IOT)

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**Abstract**— The lack of adopting new technology in agriculture directly impact on countries GDP, to enhance agro products need to adopt IOT based techniques to increase crop survey, crops status, managing water resources etc. Internet of Things has more potential and transfers the way we do traditional agriculture into smart agriculture. The increasing global population will cross 12 billion by 2015, so, in order to feed food to this huge population the agriculture need to be automating using smart system such as IoT based systems and components. The demand of food has to meet many challenges in future such as change in climate, weather conditions, environment changes impact result into intensive farming practices, smart agriculture farming through IoT based system helps to farmers to reduce human manpower resources and generated very less agriculture waste. And enhance the crops productivity. IoT Based smart farming is a hi-tech system of growing crops using tools and techniques and automated systems. It uses ICT base hardware tools, applications and advance techniques in agriculture. To incorporate IoT based farming need to use of sensors, automated vehicle, automated hardware systems, control units etc. are key components of this system.

**Keywords**—*IOT, ICT, GDP, IT, Automated Hardware*

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## Landmine Detection HC-05 Bluetooth controlled Robot (LDBR) using GPS and GSM Technology

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**Abstract**—This paper outlines state-of-the-art solution for landmine detection that facilitates the detection of mine or possible explosives that are hidden. The latitude and longitude positions are then sent to the controller via SMS making it easier to locate and further to diffuse it as well. The major components used are Arduino Uno Board, HC-05 Bluetooth module, GSM SIM900A and copper coil. The result shown from this state-of-the-art proposed system provides better security and safety mechanism for the soldiers of our country.

**Keywords**— Arduino Uno, HC-05 Bluetooth, GPS, GSM, L29N Motor Driver, Metal Detector

## Security Enhancement Using Pre-Authentication and Proxy Re-Encryption

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**Abstract**— Cloud computing on its own is a technology, arming many services with its resources on the internet, when we speak about big data context, as we have witnessed massive growth in the use of internet that indeed has increased the demand for greater storage capacities where now MB's and GB's are small talks in the fields of storage. When we talk about the cloud storage there are privacy and security concerns that we need to work upon for which as of in this paper we propose and use techniques such as pre-authentication, encryption and deencryption policies. The pre-authentication and proxy re-encryption mechanisms combine the advantages of proxy conditional re-encryption multi-sharing mechanism It can simply be termed as privacy preserving approach to increase security of data on cloud.. **Keywords**—Privacy, pre-authentication, big data

## Camouflage Surveillance Robot

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**Abstract**— - These days, numerous costs are made in the field of protection in embracing crude safety efforts to shield the edge of the city from the people who wish to enter without authorization. Most of the military associations rely on a robot in the hazard inclined regions which is difficult to achieve with armed force personnel. The existing Army robots are highly limited in scope with the audio/video, sensors, and metal identifier. The primary goal of our work is to disguise the robot including few add on parameters like Bluetooth for ongoing information handled by the visualization and PIR sensor to follow the interlopers. In this manner the proposed framework utilizing Bluetooth reduces the chances of any careless mistakes and assures the security from the threats posed by the enemy.

**Keywords** – Bluetooth Module, Army Robot, PIR Sensor, Wireless Camera and Colour sensor.

# **Workspace Allocation and Management System with Realtim Feedback from IOT Sensors**

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**Abstract**— Office real estate space investments is one of the major capital expenditures done by any IT and ITES companies. This has a major impact on the profitability of the organizations as it adds to the capital expenditure incurred by them and also has environmental implications. As the companies grow they will be looking for more real estate space which will lead to putting more land into commercial usage for office space. Today, most of the companies allocate office space for every employee statically on a 1:1 ratio. But, given the fact that the modern workforce is more mobile and at any given point of time not all the employees will be working from office for various reasons, making office space usage inefficient and ineffective. So, there is a need for managing the available space efficiently and effectively by increasing the user to cube ration by more than 1. This paper proposes a comprehensive system for workspace allocation and management with real time feedback from IOT sensors at the office spaces.

**Keywords**—IoT, Workspace, Management, IT, ITES, Sensors

## **Illusion pin authentication using Zero knowledge protocol**

**Soubhagyalaxmi V Nerabench, Sanjana B, Shaik ajith, Siddalinga Navadagi**

**Abstract**—we have used Illusion PIN (IPIN) to solve the problems regarding shoulder surfing attacks on authentication schemes.PIN -based authentication are practically used on touch screen devices. PIN works on the principle technique of hybrid images. The hybrid images are been merged to keypads. These keypads are ordered to different digits. Thus, making the user to see the device and enter the password whereas the attacker would see another password as the attacker is not as close as the user. The keypads are been shuffled to avoid further attacks, if the attacker is able to remember the position of the keypads. To increase the reliability and security of illusion pin, we worked on algorithm based on human visual perception and calculating the minimum distance from attacker and the user. We evaluated our calculations with 84 simulated shoulder-surfing attacks that were obtained from 21 different people. All of the 84 attacks were unsuccessful and we evaluated the minimum distance that a camera cannot capture the necessary data from use's keypad.. According to our analysis, surveillance camera were not able to capture the PIN of a touchscreen user when Illusion PIN is used.

## Proactive Web Security

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**ABSTRACT --** Key benefit of this paper is to provide solution to reduce the time gap between the attacker to compromise the organization and organization to detect it has been compromised. It can be done through real time monitoring the organization data activities. These activities can be from the network assets such as firewall, servers, active directory, IPS, IDS, etc. Studies show that on an average this time gap will be 4 to 6 months, by this time the attacker would have caused severe potential damage to the enterprise which might bring us huge financial loss, confidential data might be breached. To Proactively protect enterprises from such threats It is necessary to have a security operational center which helps organization in real-time monitoring and proactive analysis.

**Keywords-** Splunk, system logs, correlation, CSV-comma separated values

## The Therapeutic Robots

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**Abstract—**The therapeutic robots meets the needs of the market by integrating electronic technology and network functionality. The interactive robot, which features a particular device that contains embedded sensors in each compartment that not only transmits detected signals when users are taking their pills but also displays the message status back to the LCD screen installed on the robot by displaying details such as time, date, message regarding the intake of the pill along with the buzzer that alerts the patient. This study uses both hardware and software components which forms the embedded system to implement internet of thing (IOT). The module first interacts with the android application through a wifi module hence creating locomotion in the designed therapeutic robot. After receiving the inputs from the sensors, Arduino will send for text display regarding the intake of the pil on the screen and a timely. Therefore, the elderly staying in their home or nursing home institution can save a lot of time by managing their medications via this proposed IOT system. The smart interactive pill box will be crucial for medical care management for a broad spectrum of patients from disabled to people suffering from amnesia, including the elderly. **Keywords—**The Therapeutic robots, Internet of Things, Arduino, embedded sensors, Wi-Fi route, Pill dispenser

## Smart Device for Rectifying Air Quality and Respiratory Threats

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**Abstract --** The major agenda of smart device for rectifying air quality and respiratory disorder ALERTER using IOT is that the pollution in essential Environment is a major issue now a days. It is being a must to monitor air quality for better and excellent future and well being of all, these is recommend for an air quality monitoring frame work that let us to check and display present air condition in an area or within a fixed boundary and provides an alarm to the end users relating to Asthma, Nausea, CODP, Respiratory Acidosis etc., with the aim that they can stay away from the zone of respiratory disorders. Frame work uses air sensors to identify closeness of harmful gases observable all around and always convey this info, the sensors being interfaced with Arduino which makes this info and convey it through the app, this makes experts to check air contamination in different places and prevent it. Experts can keep a track of schools, hospitals and other places which demand safety and if project identifies defect in air quality it cautions specifies with the object that they can take precautions to manage the issue.

**Keywords:** Arduino, IOT, Blynk, Gas Sensors

## Automated Poultry Farming Observance System Using IOT

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**Abstract—** Poultry farming is a profitable business, as it produces protein-rich food resources like meat and eggs. However a healthy environment is required for the growth of chicken. To ensure the production of healthy birds, a step was taken to move from manual farming to smart farming. The poultry farm observance system is a solution to constantly monitor the ideal environmental conditions like temperature, humidity and water level. In this paper we have designed an IOT based automated smart poultry farming to monitor the environment and trigger an alarm to control the unfavorable conditions for the growth of the bird.

**Keywords**—Raspberry Pi 3B+, MQ -135, DHT11 , IOT, Smart Poultry

## Multi-Factor Authentication

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**Abstract-** In this paper, we have introduced multi factor authentication which uses web based cloud computing service .This cloud based software proposes two factor authentication system. This software uses two keys mainly that is a secret key and light weight security device. A user cannot access the content without having any one of the key that share the same computer for web-based cloud services. In addition, the system also enables users to preserve privacy by restricting the user who have same set of attributes. The cloud service will not know the exact identity of the user. It does not allow outside servers store the message key which makes it more secure. The proposed system will solve various security issues on a cloud based computing system.

**Keywords**- Multi-factor authentication, cloud service, attribute-based encryption, decryption, framework.

# Network Life Time Analysis of WSNs Using Particle Swarm Optimization

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**Abstract**— WSN (Wireless Sensor Network) is the most standard administrations utilized in business and modern applications, on account of its specialized improvement in a processor, correspondence, and low-control use of implanted registering gadgets. The WSN is worked with hubs that are utilized to watch the environment like temperature, mugginess, weight, position, vibration, sound and so forth. Extending the lifetime of the Wireless Sensor frameworks, vitality safeguarding measures are indispensable for improving the execution of WSNs. Clustering algorithms are developed to increase the lifetime of wireless sensor Networks. The technique that is used to increase the lifetime of network is Sensor node clustering so the data can be aggregated at Cluster head. Particle swarm optimization (PSO) is basic, successful and computationally proficient advancement algorithm. It helps in framing the clusters just as the Cluster Head (CH) choice.

**Keywords-** WSNs, PSO, CH, LEACH protocol

## StegCrypt (Encryption using Steganography)

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**Abstract-** The target of this venture is to obtain secured encryption and authentication using steganography. So as to accomplish this, numerous organizations & universities in the world have given solutions to secured communication, in the interim many algorithm have been created, including like AES, RSA, LSB etc. But though these algorithms have been developed they were endured to breakdown by hackers which makes them obsolete. In this paper we try to combine many already existing algorithms like AES, LSB into one proposed system. Firstly, the utilization of steganography along with traditional encryption is implemented in the proposed system. Second, we try to achieve authentication of user using OTP via E-mail. Thirdly, the encrypted data is divided and sent across many servers so it's impossible to get complete encrypted data in one path. By applying the proposed model, the probability of data compromise becomes very minimal and very hard to hack.

**Keywords-** RSA, AES, LSB, OTP, Steganography

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- Electronics and Computer | Civil
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### ◆ B.A., LL.B.(Hons.) ◆ B.B.A., LL.B.(Hons.)

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- Entrepreneurship | Retail Management

### ◆ B. Com

- Industry Integrated | Honours
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Specialisation in Cloud Computing & Big Data

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