AVIT
AARUPADAI VEEDU INSTITUTE OF TECHNOLOGY

VINAYAKA MISSION'S
RESEARCH FOUNDATION
(Deemed to be University under section 3 of the UGC Act 1956)

Department of Electronics and Communication Engineering

National E-Conference on Hardware Security-NCHS'20

SOUVENIR - NCHS'20

25th & 26th June 2020

APPROVED BY AICTE

ACCREDITED BY NAAC

RECOGNIZED BY DSIR

Two Days
National E-Conference on
Hardware Security (NCHS'20)

Theme:

Challenges, opportunities and strategies involved for Hardware Security related to VLSI, Embedded, and Signal Processing & Communication Systems

(NCHS'20)
25th & 26th June 2020

Organized by

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

AARUPADAI VEEDU INSTITUTE OF TECHNOLOGY

VINAYAKA MISSION'S RESEARCH FOUNDATION

(Deemed to be University)

www.avit.ac.in

AVIT
AARUPADAI VEEDU INSTITUTE OF TECHNOLOGY

VINAYAKA MISSION'S RESEARCH FOUNDATION
(Deemed to be University under section 3 of the UGC Act 1956)

Accredited by NAAC

Approved by AICTE

PATRONS
Dr. A.S.Ganesan, Honorable Chancellor, VMRF
Dr. Anuradha Ganesan, Director, VMRF

Core Committee
Dr. S.A.V. Satya Murty, Director (ETR), VMRF
Dr. K. L. Shanmuganathan, Principal, AVIT
Dr. D. Vijeyendra Babu, Vice Principal (Part-Time Studies), AVIT
Dr. S.P. Sangeetha, Vice Principal (Academics), AVIT
Prof. P. Rajasekaran, Vice Principal (Administration), AVIT

CONFERENCE CONVENER
Dr. L. K. Hema, Professor & Head/ ECE

CONFERENCE CO-CONVENERS
Dr. Sita Devi Bharatula, Associate Professor/ ECE
Mr .J. Vijay Assistant Professor (Gr-II)/ECE

Advisory Committee
1. Dr. Vijay K. Varadan, Professor, Electrical Engineering, University of Arkansas
2. Dr. Umashankar, B.E., M.E., Ph.D., Asst. Professor, EEET, Yanbu Industrial College,
3. Dr. Swarna Ravindra Babu, B.Tech., M.Tech., Ph.D., Founder & CEO-Coovum Smart Systems & Services Pvt. Ltd., Chennai, Formerly working as Principal Engineer in SAMSUNG Electronics
4. Mr. A. Sadogopan, B.Sc.(Phy), M.A., MBA, M.Phil., PGDCA, PGDM, FIETE, Retd. AGM BSNL (TN Circle)
5. Shri. K. Venkatraman, B.E., M.E., (Ph.D.), Managing Partner Technica, Bio Vision Medical Systems, Chennai
6. Shri. Ganesh Bala, Director-Engineering, Asia, Amphenol Antenna Solutions, India
7. Mr. Vijayan Sugumaran Ph.D, Professor of Management Information Systems Oakland University Rochester
8. Mr. Harees J, Microcontroller Application Engineer, Texas Instruments, Houston.
9. Dr. S. J. Thiruvengadam Professor, Thiagarajar College of Engineering.
10. Dr. C. Annadurai, Associate Professor, SSN Institutions
11. Dr. S. Sivanantham Associate Professor, VLSI Division, VIT University.
12. Dr. Rubesh Anand Professor at Bannari Amman Institute of Technology
13. Mr. Athifsha, Electrical/Electronic Manufacturing, Abe Semiconductor Designs
14. Mr. Jayanandan Thulasiraman, Founder & CEO of Tesla Minds
15. Mr. K Chandirasekaran, Professor, Gurunanak Group Of Institution

ORGANIZING COMMITTEE
Mr. R. Karthikeyan, Assistant Professor (Gr-II)/ECE
Mrs. R. Mohana Priya, Assistant Professor (Gr-II)/ECE
Mrs. S. Vithyalakshmi Asst, Assistant Professor (Gr-II)/ECE
Mr. Rajat Kumar Diwedi, Assistant Professor (Gr-II)/ECE
Mrs. V. Vanitha, Assistant Professor (Gr-II)/ECE

Message from Honourable Chancellor

I am glad to know that the Department of Electronics and Communication Engineering of Aarupadai Veedu Institute of Technology is organizing National E-conference on “Hardware Security” on 25-26th June 2020.

The unprecedented pandemic situation prevailing all over the globe has driven the professionals to continue their inventions and knowledge dissemination virtually. I believe that such E-conferences will be one of the finest opportunities for academicians, scientists, professionals, students and researchers from all over the nation to share and express their views, discuss the practical challenges and possible solutions in the specific domain.

The theme of the conference emphasizes the necessity of hardware security in strategic organizations like DRDO, ISRO etc., and also to ensure safety to our cryptographic assets. I hope the scientific deliberations, discussions and other activities that happen during the conference will enrich the participants and definitely leave new milestones.

I wish the organizers the very best for the success of the Conference.

Dr. A. S. Ganesan
Chancellor
Vinayaka Mission’s Research Foundation (VMRF)

MESSAGE FROM DIRECTOR

The foundation stones of Vinayaka Missions Research Foundation (VMRF) are laid on the principle of academic pursuit and excellence. We, at VMRF, have made this decree our motto and our way of life.

Research and development form the backbone of our curriculum at VMRF. The staff and students are involved in various path-breaking innovative research activities throughout the year. Every department of our Institution organizes conferences and seminars regularly on contemporary and relevant topics to expedite research in areas that will lead to constant metamorphosis in the academia as well.

The Department of Electronics and Communication Engineering at VMRF, right from its inception, has been active in research and innovation and has set up an ambient academic environment for its students and research scholars alike. With the commitment of highly qualified and efficient staff, the department endeavours firmly to make a mark in the field of research and development. The Two-Day National E-Conference on Hardware Security organized by the Department of Electronics and Communications is another attempt to provide a platform for academicians - teachers, students, research scholars, and industry experts, globally to discuss contemporary trends and innovations in Electronics, Computers, and Communications.

I wish the conference all success.

Stay Home, Stay Safe & Protect Others.

Dr. Anuradha Ganesan
Director
Vinayaka Mission's Research Foundation (VMRF)

Message from Director (Research)

I am extremely happy to note that Electronics & Communications Department of Aarupadai Veedu Institute of Technology is conducting a two day "National conference on Hardware Security" during 25th-26th June, 2020.

With the advances in computer technology, communications and Internet, the computers are used extensively from Office automation, e-commerce, online monetary transactions, and process control plants to strategic systems. Though it is a welcome sign, the rapid increase in computer hacking incidents is a cause for worry. When we talk about information security, it corresponds to confidentiality, integrity and availability. All these important features refer to software security only. Over the years this field has matured sufficiently and various security mechanisms along with advanced encryption technologies and digital signatures.

Unfortunately most of the electronic integrated Circuit Chips that are used in various systems in all domains of our country is imported. Many incidents were reported across the world where Hardware Trojans were inserted in the imported hardware that was used in important systems. Thus hardware security has become an area of priority to work on, especially by the Strategic Organizations. Hardware Security can be improved to large extent through tedious Hardware Trojan detection techniques such as Side Channel Analysis (timing analysis, power or differential current, thermal, EM radiation), Functional testing, designing secure hardware with Trusted Platform Module ICs, using Executable Only Memory(XOM), Physically Unclonable functions etc.

I hope the delegates will deliberate on all these issues and more to find new techniques to provide Hardware Security, while simultaneously improving software techniques. I understand specialists working in the hardware security are giving Keynote talks.

I wish the National Conference all success.

Dr. S. A. V. Satya Murty
Director (Research),
Vinayaka Mission's Research Foundation
(A Deemed to be University)

Message from Principal

Amidst of high Corona impact all over the universe the technical inventions and updates nowhere being stopped by this National E- Conference on Hardware Security to be held on 25th& 26th June 2020. Technology is revolutionizing the progress of the world. The Big Earth is becoming a Global village due to the rapid development in the field of Internet based communication system. The technology is increasing the human comfort Index and safe living of the people.

In these aspects the field of Electronics and Communication Engineering plays a major role. The development in the form of Internet of Things (IOT), Cloud Computing, Big data analysis and mobile applications are leading the growth platform in this current century.

By recognizing these trends of development I understand the Electronics and Communication Engineering of AVIT is conducting the National E - Conference and releasing the Souvenir containing various innovative, developmental and research articles for the knowledge enlightenment of the student community.

My hearty congratulations and best wishes to the Department of ECE for the success of two days National E - Conference on Hardware Security 2020.

Dr. K. L. Shunmuganathan
Principal
Aarupadai Veedu Institute of Technology (AVIT)
Vinayaka Mission's Research Foundation (VMRF)

Message from Vice Principal (Part Time Studies)

I am pleased to welcome you to the National E-Conference on Hardware Security held during 25-26, June 2020.The Conference focuses on the apt theme which is the need on the hour. As we all know, Hardware security has become a hot topic recently with security becoming a growing concern in Internet of Things (IoT) Industry. An increased focus has been placed on Hardware Security, as it shows real promise in helping to secure devices from Cyber-attacks. The most noteworthy Cyber-attacks included APT attacks, hardware vulnerabilities and high profile data breaches. I hope this Conference forum will be an excellent platform for exchanging information and discussion on Hardware Security, representing the latest developments and future trends. I wish the Convener & Team members for organizing the National E-Conference on Hardware Security on a significant theme during this Pandemic situation.

I wish all the very best for the success of National E-Conference on Hardware Security

Dr. D. Vijendra Babu
Vice Principal (Part Time Studies)
Professor, ECE
Aarupadai Veedu Institute of Technology (AVIT)
Vinayaka Mission's Research Foundation (VMRF)

Message from Vice Principal (Admin)

Greetings to all…!!!

I am immensely happy to know that the Department of Electronics and Communication Engineering is organizing a National E-Conference on Hardware Security. Despite the enormous advances in our ability to understand, interpret and ultimately manage the natural world there would be times when situation demands us to withstand the social and economic evolution. Currently, we are undergoing such phase of life. In these critical days, where almost everything happens online the Department of ECE has aptly chosen a topic that features all the factors pertaining to the challenges, opportunities and strategies in Hardware Security.

One certain fact is that "Communication is key in any crisis" and this conference is one such platform to make it happen. In this context, I hope this conference will help all the participants to have an insight of the challenges encountered and solutions adopted and opportunities to establish productive new academic and industry research collaboration nationwide.

I also congratulate the HoD and all the faculty members for their efforts in organizing this conference and wish the conference all the success.

Prof. .P.Rajasekaran
Vice Principal (Admin)
Aarupadai Veedu Institute of Technology (AVIT),
Vinayaka Mission's Research Foundation (VMRF)

Message from Vice Principal (Academics)

It is a great pride that our Institution is continuously progressing in Academic and co-curricular activities. I am glad that the Department of Electronics and Communication Engineering of our AarupadaiVeedu Institute of Technology is organizing a National E-conference on "Hardware Security" which is scheduled on 25th&26th June 2020.

This conference would facilitate wonderful opportunities aims to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results on all aspects of Hardware Security. It also provides a premier interdisciplinary platform for researchers, practitioners, and educators to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered and solutions adopted in the fields of Hardware Security.

I convey my warm greetings and felicitations to the organizing committee and the participants.

I wish the conference a grand success.

Dr. S. P. Sangeetha,
Vice Principal (Academics)
Professor – Civil Engineering,
Aarupadai Veedu Institute of Technology (AVIT),
Vinayaka Mission's Research Foundation (VMRF)

Message from Head of the Department

I am very much delighted in welcoming the delegates for the National E-Conference on Hardware Security –NCHS'20 held during 25-26, June 2020. The prime focus of this conference is to bring together academia, researchers and industry professional to join hands in finding the scope, challenges and opportunities and solutions that are encountered in the field of Hardware Security. Most of the strategic organizations are working on Hardware security to secure and safe guard the missiles, lifesaving equipment and cryptographic assets. The main agenda in hardware security is to protect our hardware systems such as computers, peripherals, microcontrollers, SoC's from unauthorized threats that emerge in the form of Hardware Trojans from the foundry to market. Also the growth of IoT devices and allied technologies paved way for technological developments, simultaneously provide opportunities to the cyber criminals to exploit our strategic assets.

I am sure that this E-conference brings together the researchers, academia and industry personnel to exchange their innovative research problems, solutions and technical domain expertise through virtual knowledge dissemination in the recent technological developments of Electronics and Communication Engineering during this pandemic situation.

Dr. L.K.HEMA
Professor & Head/ ECE
Aarupadai Veedu Institute of Technology (AVIT),
Vinayaka Mission's Research Foundation (VMRF)
Convener-NCHS'20

Contents

S. No	Title of the Paper	Paper ID	Page No.
1	**A Co-operative spectrum sensing using Hetnet and OFDM in Cognitive Radio** Dr.V.Ganesan[1], Blesson Saviour.M[2], Lokeshwaran.S[2], Manickam.V[2] [1]Assistant professor, [2]Student [1,2]Department of Electronics and Communication Engineering [1,2]Jeppiaar Maamallan Engineering College	NCHS202003101	1
2	**Power Management System for Hybrid Solar PV-Wind Energy Using Bidirectional AC/DC Micro Grid** Chandru E N[1], R Dhivagar[2], S Hari Shankar[3], J Vijay[4], S Rajasekaran[5], M Ayyadurai[5] [1, 2, 3, 4, 5, 6]Department of Electronics and Communication Engineering [1, 2, 3, 5, 6]Jeppiaar Maamallan Engineering College [4]Aarupadai Veedu Institute of Technology	NCHS202003102	1
3	**Threat Intrusion Detection Based On Face Recognition Using Haar Cascade** Dr. K. V. Karthikyen[1], Patric Anto Ebinezar[2], Melvin Jerold[2] [1]Principal, [2]students [1, 2]Department of Electronics and Communication Engineering [1, 2]Jeppiaar Maamallan Engineering College	NCHS202003103	2
4	**A Survey on Dental Pantamograms Jawbone Cysts and Tumor Detection by Using Image Enhancement Techniques** Meenakshisundaram.N[1],Lakshmi Narashimha.M.K[2] , Deepak.N[2], Lokesh.R[2] [1]Assistant professor,[2]Student [1,2]Department of Electronics and Communication Engineering [1,2]Jeppiaar Maamallan Engineering College	NCHS202003104	2
5	**Intension classification of brain network by using EEG** Karthikeyan.K.V[1],Abisheik.P[2], Gobirajan.K[2], Gokul Raj.M[2] [1]Principal, [2]Student [1, 2]Department of Electronics and Communication Engineering [1, 2]Jeppiaar Maamallan Engineering College abisheik.chinna98@gmail.com	NCHS202003105	3
6	**Intelligent Transportation System by Controlling Traffic using Video Processing in Mat Lab** Vijay.J[1], Akshaykumar.K[2], Jeevarathinam.K[3], Sriram.D[4] [1]Principal, [2]Student [1, 2, 3, 4]Department of Electronics and Communication Engineering [1]Aarupadai Veedu Institute of Technology [2, 3, 4]Jeppiaar Maamallan Engineering College abisheik.chinna98@gmail.com	NCHS202003106	3

7	**Arduino Based Autonomous Water Quality Monitoring Gadgetry** Maninathan D[1], Muthamil R[2], Naveenkumar S[3], Pelleti Harshavardhan[4], Aiswarya V[5] Agni College of Technology, Chennai, Tamil Nadu.	NCHS202003112	4
8	**Power Control of Doubly Fed Induction Generator Using DPC Method** Preethkumar.K[1], Dinesh.G[2] [1, 2]Department of Electrical and Electronics Engineering [1, 2]Jeppiaar SRR Engineering College	NCHS202003113	4
9	**Paper ID -** NCHS202003114: **Monitoring of Infant Safety and security using GSM and Face recognition devices** K.H.Shakthi Murugan[1], Kalai Arasan.D[2], Kavin.L[2], Kiran Kumar.S[2] [1]Assistant Professor, [2]Student [1,2]Department of Electronics and Communication Engineering [1,2]Jeppiaar Maamallan Engineering College kalaimoorthy.d1998@gmail.com	NCHS202003114	5
10	**Smart Land Wirts Chaft** [1]PreethKumar K, [2]Arun R, [3]Dinesh G, [4]Dr. S. Jaanaa Rubavathy [1, 2, 3]UG Scholar, [4]Assistant Professor [1, 2, 3, 4]B.E. Electrical and Electronics Engineering [1, 2, 3, 4]Jeppiaar SRR Engineering college, Chennai, India. preeth.preethkrishnan@gmail.com, arun11021999@gmail.com, callmegd0201@gmail.com, jaanaasrreee@gmail.com	NCHS202003115	6
11	**Paper ID -** NCHS202003116: **Pipelined CORDIC Based Low Power Divider Architecture for DSP Applications** V.Vannammal@Revathy[1], B.Vijayalakshmi[2], Mohammed Wajid Khan[3] [1, 2, 3]Department of Electronics & Communication Engineering, [1, 2, 3]B.S.Abdur Rahman Crescent Institute of Science and Technology, Chennai, Tamil Nadu, India	NCHS202003116	6
12	**Concealment of Data with MSB Using Modified Secure Hash Algorithm** Mrs.P.Srividdhya[1], Mr.K.Dhanasekaran[2] [1,2]Assistant Professor [1,2]Department of Electronics and Communication Engineering, Mailam Engineering College, Mailam.	NCHS202003117	7
13	**LDC based Finger Vein Recognition using K-means Classification** T. Jaya[1], Dharsan. S[2], Hemapriya. S[3] [1]Assistant Professor, [2, 3]UG Scholar [1, 2, 3]Department of Electronics and Communication Engineering, [1, 2, 3]Vels Institute of Science, Technology and Advanced Studies, (VISTAS), Chennai.	NCHS202003118	7

14	**Engine Position Driver Using Generic Timer Module for AURIX Microcontroller – TC275X** Chitra. D[1], Anuradha[2], Mohameed Abdul Kadhar[3] [1, 2, 3]Department of Electronics & Communication Engineering, [1, 2, 3]B.S.Abdur Rahman Crescent Institute of Science and Technology, Chennai, Tamil Nadu, India	NCHS202003119	8
15	**Design & simulation of efficient DC-DC converter using Switched capacitor** A. Shifayanoor[1], Dr.S. Kaja Mohideen[2] [1, 2]Department of Electronics & Communication Engineering, [1, 2]B. S. Abdur Rahman Crescent Institute of Science and Technology, Chennai, Tamil Nadu, India	NCHS202003120	8
16	**IOT Based Smart Farming and Crop Analysis to Yield Increase in Food Production** Sujitha Arasi B, Saranya Devi B, Priyadharshini M, Aida Jones Department of Electronics and Communication Engineering, KCG College of Technology, Chennai, India sujithabaskaran10@gmail.com, aida.ece@kcgcollege.com	NCHS202003121	9
17	**Detection of Diabetic Retinopathy using Masking Algorithm** Dinesh Raja. S[1], Aravind. R[2], Vijayalakshmi.P[3] & Dr. Rajendran.V[4] [1, 2]UG Scholar. [3]Asst. Professor, [4]Professor & Director [1, 2, 3, 4]Dept. of ECE, Vels Institute of Science, Technology and Advanced Studies, (VISTAS) [1]dineshrajasakthivel@gmail.com, [2]aravindsrk11@gmail.com, [3]viji.se@velsuniv.ac.in	NCHS202003122	9
18	**Early Prediction and Analysis of Heart Diseases Using Machine Learning Techniques** Jarius Anston.M[1], Manoj Kumaran. R[2], Vijayalakshmi.P[3] & Dr. Rajendran.V[4] [1, 2]UG Scholar. [3]Asst. Professor, [4]Professor & Director [1, 2, 3, 4]Dept. of ECE, Vels Institute of Science, Technology and Advanced Studies, (VISTAS) [1]dineshrajasakthivel@gmail.com, [2]aravindsrk11@gmail.com, [3]viji.se@velsuniv.ac.in	NCHS202003123	10
19	**Industry Modbus Protocol Communication Based Master and Slave Transmitter and Receiver System** M.SowmiyaManoj[1], S.Balaji[2] [1, 2]Assistant Professor [1, 2]Department of Electronics and Communication Engineering, BIHER, Tamilnadu, India [1]sowmiyabaskar67@gmail.com, [2]bala.sripathy@gmail.com	NCHS202003124	11

20	**Identification & Analysis of Palm Print In Biometric Authentication System Using K-NN Algorithm** Sowmiya Manoj.M[1], Mathiukhonang[2], A.Charan Sai[3] [1, 2]Assistant Professor [1, 2, 3]Department of Electronics and Communication Engineering, [1, 2, 3]Bharath Institute Of Higher Education and Research, Tamilnadu, India [1]sowmiyabaskar67@gmail.com	NCHS202003125	11
21	**Early Breast Cancer Detection Through Reflection Coefficient and Mass Density Using X-Ray Images in Python** DR.G.R Jothilaksmi[1], Shalni kumara[2], A. Santhiya[2] [1]Associate Professor, [2]UG scholar [1,2]Department of ECE, Vels Institute of Science, Technology & Advanced Studies, (VISTAS), Chennai Shalunisha4665@gmail.com, jothi.se@velsuniv.ac.in	NCHS202003126	12
22	**Cyst's 3D projection of sonomammogram using physical parameters - reflection coefficient and mass density in Python** DR.G.R Jothilaksmi[1], V.Adarsh, E[2]. Ram Natesh[2], [1]Associate Professor, [2]UG scholar [1,2]Department of ECE, Vels Institute of Science, Technology & Advanced Studies, (VISTAS), Chennai adarshterrance@gmail.com, jothi.se@velsuniv.ac.in	NCHS202003127	12
23	**Optimizing Road Traffic System Using IOT Sensor Networks** Mercy Theresa M.[@1], Jesudoss A. [*2], Lakshmanan L.[#3], Christy A.[&4], Sardar Maran[~5] *Associate Professor[@1], Dept. of ECE, Prince Shri Venkateswara Padmavathy Engineering College* *Associate Professor[*,2], Professors[#3, &4, ~5], Department of CSE, Sathyabama Institute of Science and Technology, Chennai, Tamil Nadu, India* *mercyjesudossa@gmail.com[&1], jesudossas@gmail.com[*2], laks14@yahoo.com[#3], ac.christy[&4], sardarmaran@gmail.com[~5]*	NCHS202003128	13
24	**Electrochemical Sensors Using CNT'S (Review)** Guna Shankar Rimmalapudi[1], R. Indumathi[2], R. Vinodhini[3] [1, 2, 3]Assistant Professor [1, 2, 3]Department of Biomedical Engineering, [1, 2, 3]Bharath Institute of Higher Education and Research, guna099213@gmail.com, indhu.maheshradha@gmail.com, vinodhiniravi44@gmail.com	NCHS202003129	14
25	**Identification and classification of Brain Tumor using Image Fusion and Neural network** Sonali Srivastava, II Year M.Tech ES, Department of ECE, Bharath Institute of Higher Education and Research, sonali.deos@gmail.com	NCHS202003130	14

26	**Implementation OF Li-Fi Technology for Optical Data Transfer in Underwater System.** Vijay.S, II Year M.Tech ES, Department of ECE, Bharath Institute of Higher Education and Research, vijayece19@gmail.com	NCHS202003131	15
27	**Public Water Supply Grid Monitoring to Avoid Tampering & Water Man Fraud Using IOT.** B.Hemalatha, P.Sumanth, P.Hanikant Department of ECE, Bharath Institute of Higher Education and Research, Chennai, India hema.contact@gmail.com, p.sumanth1396@gmail.com	NCHS202003132	15
28	**Arduino Based Radioactive Tracking System** B.Hemalatha, Hari Narayana.N Department of ECE, Bharath Institute of Higher Education and Research, Chennai, India hema.contact@gmail.com, harinarayana312@gmail.com	NCHS202003133	16
29	**Paper ID -** NCHS202003134: **Design of Full Adder Using GDI Technique** [1]Tonie Raalph .C, [2]Alwin Revanth P, [3]Thennarasu P, [4]Dr. R. Uma Department of ECE, [1, 2, 3]UG Scholar, [4]Professor [1, 2, 3, 4]Jeppiaar Institute of Technology	NCHS202003134	16
30	**Receiver Diversity Combining Using Evolutionary Algorithms in Rayleigh Fading Channel** [1]Reena Gladius.K, [2]Bhavani Sruthi.S, [3]Asfiya Naaz.A.I, [4]R.Rubala Department of ECE, [1, 2, 3]UG Scholar, [4]Assistant Professor [1, 2, 3, 4]Jeppiaar Institute of Technology	NCHS202003139	17
31	**Arduino Based Automatic Solar Tracking System with Mirrors** S.V.Surya Prabha, S.Preetha, S.Mary Cynthia, Department of ECE, Jeppiaar Institute of Technology	NCHS202003140	17
32	**Fall Detection with Ambulance Service** Shine H, Kishan Chandra G Department of Computer Science Engineering Jeppiaar Institute of Technology shineh@jeppiaarinistitute.org, kishanch2425@gmail.com	NCHS202003141	18
33	**Portable Low Vision Video Magnifier with Voice Output** India B[1], Asfiya Naaz A I[2]. Reena Gladius K[3], Mary Cynthia S[4] Department of ECE, 1, 2, 3UG Scholar, 4Assistant Professor 1, 2, 3, 4Jeppiaar Institute of Technology	NCHS202003142	18

34	**Coal Mine Safety System Using Raspberry Pi** A.Parimala[1], D.Naveen kumar[2], S.Hariharan[3], M.Ramkumar[4] Department of ECE, [2, 3, 4]UG Scholar, [1]Assistant Professor [1, 2, 3, 4]Jeppiaar Institute of Technology	NCHS202003143	19
35	**Detecting Lung Malignant growth using ANN** N R Gladiss Merlin Associate Professor, Department of CSE, Jeppiaar Institute of Technology gladissmerlin@jepiaarinstitute.org	NCHS202003144	19
36	**Dynamic Load Balancing in LTE Network** Asfiya Naaz A.I[1], India B.S[2], Bhavani Sruthi.S[3], R. Rubala4, [1, 2, 3]UG Scholar, [4]Assistant Professor [1, 2, 3, 4]Jeppiaar Institute of Technology	NCHS202003145	20
37	**Proper Condition and Stability of Bridge Is Monitored Using Raspberry Pi Processor** Gopika CA[1], Sangavi L[2], Mrs.S.Mary Cynthia[3] [1, 2]UG Scholar, [3]Assistant Professor [1, 2, 3, 4]Department of ECE [1, 2, 3, 4]Jeppiaar Institute of Technology	NCHS202003146	20
38	**Recursive Multiplier and Comparison between Array, Wallace and DADDA Multipliers** Bhavani Sruthi. S[1], Reena Gladius. K[2], India. B. S[3], Dr. Uma. R[4] [1, 2, 3]UG Scholar, [4]Professor [1, 2, 3, 4]Department of ECE [1, 2, 3, 4]Jeppiaar Institute of Technology	NCHS202003147	21
39	**Assessment of Positive and Negative States of Children with Autism Spectrum Disorder Using Electrocardiogram Signals and Machine Learning Algorithms** Dr. S.Jerritta[1], Thrisha J[2], Harinie JR[2] [1]Associate Professor, [2]UG Scholar, [1, 2, 3, 4]Dept. of ECE, Vels Institute of Science, Technology and Advanced Studies, (VISTAS) jerritta.se@velsuniv.ac.in, thrisha612@gmail.com, jrharinie@gmail.com	NCHS202003149	21
40	**Design of Parallel Prefix Adder for High Speed and Low Slice Utilization in FPGA** Raj. O[1], Adithyan. S[2], Pravin. A[3], Saravana Kumar. D[4], Dr. R. Uma[5] Department of ECE, [1, 2, 3]UG Scholar, [4]Professor [1, 2, 3, 4]Jeppiaar Institute of Technology	NCHS202003150	22
41	**Evolution of Large Capacity Fiber to the Home Technology (FTTH) in Competition with Other Wireless Technologies** R.Gowri[1], A. D. Sathya[2], R. Divya[3] [1, 2, 3]Department of ECE [1, 2, 3]UG Scholar [1, 2, 3]Jeppiaar Institute of Technology	NCHS202003151	23

42	**Smart Home Automation and Security System Using Arduino** B. Hemalatha, Sowmiya Manoj. M, Ganesh. Tummi Department of ECE Bharath Institute of Higher Education and Research hema.contact@gmail.com, sowmy_anu@yahoo.com, ganeshtummi9669@gmail.com	NCHS202003152	23
43	**Arduino Based Vibration Detector and Alarm System** S.Mary Cynthia, Assistant Professor, Dept of ECE, Jeppiaar Institute of technology, Sriperumbudhur	NCHS202003153	24
44	**People Evacuation Guidance Model for Fire Hazard** Dr. Faritha Banu J[1], Yuvarani K[2], Suvetha B[3], Nyle S[4], Srilekha A[5] [1]Professor, [2, 3, 4]UG Scholar, [1, 2, 3, 4]Department of ECE, Jeppiaar Institute of technology, Sriperumbudhur, banujahir@gmail.com[1], yuvaraniyuva99@gmail.com[2], suvebala99@gmail.com[3], Email:nylejenifer@gmail.com[4], writersrilekha@gmail.com[5]	NCHS202003154	24
45	**Integrated Multi-Purpose Field Surveillance Robot For Military Use** DR. G.R Jothilaksmi[1], S. Vishal[2], G. Vijayaraj[2] [1]Associate Professor, [2]UG Scholar, Vels Institute of Science, Technology and Advanced studies, (VISTAS), Chennai	NCHS202003156	25
46	**Application of Cognitive Radio and Interference Cancellation in the L-Band Based on Future Air-To-Ground Communication Systems** Dr.M.Meena[1], P.Negha.A[2], A. Hillary Merlin[2] [1]Assistant Professor, [2]UG Scholar Department of ECE, Vels Institute of Science, Technology and Advanced studies, (VISTAS), Chennai meena.se@velsuniv.ac.in, neghashree14@gmail.com, hillarymerlin99@gmail.com	NCHS202003157	25
47	**Solar Vehicle for Green Environment** [1]Gunasekaran. J, [2]Vijay.J, [3]Mahalakshmi. K, [4]Aishwarya.A [1, 3, 4]Student, [2]Assistant Professor [2]Aarupadai veedu Institute of Technology	NCHS202003158	26
48	**The PCA and MLRI Schemes for Improving the Digital Image Quality** [1]Dr.N.Satheesh Kumar, [2]Dr.M.Venkatesan, [1, 2]Professor, Department of ECE, PBR Visvodaya Institute of Technology and Science, Kavali, A.P	NCHS202003159	26

49	**Computer Aided Skin Disease Detection and Classification** Guna Shankar Rimmalapudi[1], R.Indumathi[2], R.Vinodhini[3] [1]UG Scholar, [2, 3]Assistant Professor Bharath Institute of Higher Education and Research, Chennai guna099213@gmail.com, indhu.maheshradha@gmail.com , vinodhiniravi44@gmail.com	NCHS202003160	27
50	**Internet of Things: Challenges, Architectures, Protocols, Applications and Opportunities** Dr. K. Sasikala Associate Professor, Department of Computer Science and Engineering, Vinayaka Mission's Kirupananda Variyar Engineering College, Vinayaka Mission's Research Foundation (Deemed To Be University), Salem-636308	NCHS202003161	27
51	**Driver Drowsiness Detection in Real Time Scenario Using a Logistic-Regression-Based Machine Learning Algorithm** Sai Krishna. J[1], Mohameed Thazeem[1], Jeramiah Asir[1], Vijay. J[2] [1]U.G Student, [2]Assistant Professor (Gr-II) [1, 2]Department of ECE, Aarupadai Veedu Institute of Technology, Vinayaka Mission's Research Foundation vijay.ece@avit.ac.in	NCHS202003201	28
52	**iBeacons for Localization and Tracking of People in Women Safety** Muralimanohar V[1], Dinesh kumar J P[1], Vignesh[1], Vijay J[2] [1]U.G Student, [2]Assistant Professor (Gr-II) [1, 2]Department of ECE, Aarupadai Veedu Institute of Technology, Vinayaka Mission's Research Foundation vijay.ece@avit.ac.in	NCHS202003202	28
53	**An Automated Method for Counting of Blood Cells Using Image Processing** T.C.Ajith Kirthic[1], Y.Renith[1], A.V.Deepak Kumar[1], L.K.Hema[2] [1]U.G Student, [2]Professor & Head [1, 2]Department of ECE, Aarupadai Veedu Institute of Technology, Vinayaka Mission's Research Foundation hemalk@avit.ac.in	NCHS202003203	29
54	**A Smart Band for Women Safety Using Raspberry Pi** Kankanala Sitaram[1], Pavan Chowdary[1], Akhil Reddy[1], D. Vijendra Babu[2] [1]U.G Student, [2]Professor & Vice Principal [1, 2]Department of ECE, Aarupadai Veedu Institute of Technology, Vinayaka Mission's Research Foundation vijendrababu@avit.ac.in	NCHS202003204	30

55	**Automatic Speed Control of Vehicle Using RF and GSM** P.Jayadeep reddy[1], N.Shanmuka Ganesh Reddy[1], Dheeraj Kumar Reddy[1], Vijay J[2] [1]U.G Student, [2]Assistant Professor (Gr-II) [1, 2]Department of ECE, Aarupadai Veedu Institute of Technology, Vinayaka Mission's Research Foundation vijay.ece@avit.ac.in	NCHS202003205	30
56	**Handheld Tourist Guidance System Using GPS** D.N.Sunil[1], S.Thirunavukarasu[1], L.K.Hema[2] [1]U.G Student, [2]Professor & Head [1, 2]Department of ECE, Aarupadai Veedu Institute of Technology, Vinayaka Mission's Research Foundation hemalk@avit.ac.in	NCHS202003206	31
57	**Paper ID -** NCHS202003207: **Vehicle to Vehicle Based Speed Manipulation System for Collision Avoidance Using Can Protocol** Vijay.J[1], Sajan Kumar[2], Gaurav Kumar[2], Md. Ashfaque[2], [1]U.G Student, [2]Assistant Professor (Gr-II) [1, 2]Department of ECE, Aarupadai Veedu Institute of Technology, Vinayaka Mission's Research Foundation vijay.ece@avit.ac.in	NCHS202003207	31
58	**A Three-Port DC-DC Converter Based Distributed DC Grid Connected PV System with Island System Output Voltage Allocation Control by using P & O Method** Mrs.K.S.Kavitha Kumari[1], Ihsan Mubarack Ali.A[2], Muhammed haris.K[3], Abdul latheef[4] [1]Assistant Professor (Gr-II), [2, 3, 4]U.G Student, [1, 2]Department of EEE, Aarupadai Veedu Institute of Technology, Vinayaka Mission's Research Foundation kavitha.eee@avit.ac.in, latheefthayyil007@gmail.com, iihsanalik@gmail.com,kallanharis7169@gmail.com	NCHS202003208	32
59	**Design and Development of Circuit for Gas Leakage Detection** Rajat Kumar Dwibedi[1], Sagar R D[2], Patnam Phani Sai[2], Ganjikunta Yeshwanth[2] [1]Assistant Professor (Gr-II), [2]U.G Student, [1, 2]Department of ECE, Aarupadai Veedu Institute of Technology, Vinayaka Mission's Research Foundation rajatkumar.ece@avit.ac.in, Sunithachillu@gmail.com, phanisai03@gmail.com, yashwanthyash96@gmail.com	NCHS202003209	33
60	**IOT Based Solution for Monitoring Of Pollution through Pesticide in Fresh Fruits and Vegetables Available In Markets** Mohammed Yasim Abdullakutty N. A[1], Sanjay Rajan[1], Nayomi Purushothaman[1], Vanitha. V[2] [1]U.G Student, [2]Assistant Professor (Gr-II) [1, 2]Department of ECE, Aarupadai Veedu Institute of Technology, Vinayaka Mission's Research Foundation nayominayuz@gmail.com, vanitha.ece@avit.ac.in	NCHS202003210	33

61	**Smart Reconnaissance and Apprise System Enhanced With Raspberry Pi and IEEE 802.11 Module** Ajith.P[1], Hariharan .P. V[1], Rufus Gnanaraj. R[1], R Mohana Priya[2] [1]U.G Student, [2]Assistant Professor (Gr-II) [1, 2]Department of ECE, Aarupadai Veedu Institute of Technology, Vinayaka Mission's Research Foundation harihara631@gmail.com, mohanapriya@avit.ac.in	NCHS202003211	34
62	**Development of Microcontroller Based Landslide Early Warning System** Varun J P[1],Roshin Chandra[1],Anjas M P[1], R Mohana Priya[2] [1]U.G Student, [2]Assistant Professor (Gr-II) [1, 2]Department of ECE, Aarupadai Veedu Institute of Technology, Vinayaka Mission's Research Foundation varunjpmch@gmail.com, mohanapriya@avit.ac.in	NCHS202003212	35
63	**Remote Controlled Solar Grass Cutter Robot** Aswin John[1], Harikrishnan[1], R Mohana Priya[2] [1]U.G Student, [2]Assistant Professor (Gr-II) [1, 2]Department of ECE, Aarupadai Veedu Institute of Technology, Vinayaka Mission's Research Foundation aswin007john@gmail.com, mohanapriya@avit.ac.in	NCHS202003213	35
64	**IOT Webserver to Analyse Quality of Air, Temperature, Humidity and Climatic Condition in Our Environment** G. Harishankari[1], G. Pavithra[1], T. Suvalakshmi[1], R Mohana Priya[2] [1]U.G Student, [2]Assistant Professor (Gr-II) [1, 2]Department of ECE, Aarupadai Veedu Institute of Technology, Vinayaka Mission's Research Foundation pavithragopi99@gmail.com, mohanapriya@avit.ac.in	NCHS202003214	36
65	**Paper ID -** NCHS202003215: **Human Interactive Wireless Notice Board** Syed Mohammed Al Aman[1], Arjun Santhosh[1], Jerin J Jacob[1], R Karthikeyan[2] [1]U.G Student, [2]Assistant Professor (Gr-II) [1, 2]Department of ECE, Aarupadai Veedu Institute of Technology, Vinayaka Mission's Research Foundation rrmdkarthikeyan@avit.ac.in	NCHS202003215	36

Paper ID - NCHS202003101: **A Co-operative spectrum sensing using Hetnet and OFDM in Cognitive Radio**

Dr.V.Ganesan[1], Blesson Saviour.M[2], Lokeshwaran.S[2], Manickam.V[2]
[1]Assistant professor, [2]Student
[1,2]Department of Electronics and Communication Engineering
[1,2]Jeppiaar Maamallan Engineering College
sivalokesh@live.com

ABSTRACT

Cognitive networks are programmable and dynamic nature, which help to use the spectrum effectively. In Cognitive Radio, Spectrum sensing, spectrum allocation, and reuse scenarios approach with the different algorithm which improves the utilization of the spectrum. Hence, in this paper the spectrum sense and allocate by gazer node to other users. The new technique brings more efficiency in achieving spectrum utilization. The data collision in network overcome by Gazer based cognitive radio network which provides more freedom for frequency sharing paradigm. Lot of communication technique available for improving the spectrum sensing and it is the one of the techniques to improve the spectrum sensing. OFDM is used in the system; to reduce the interference happens in the network. By this method the throughput, packet ratio efficiency, bit rate and also residual energy are improved.

Keywords— *OFDM, Cognitive Radio, Spectrum Sensing, Gazer Node, Hornet.*

Paper ID - NCHS202003102: **Power Management System for Hybrid Solar PV- Wind Energy Using Bidirectional AC/DC Micro Grid**

Chandru E N[1], R Dhivagar[2], S Hari Shankar[3], J Vijay[4], S Rajasekaran[5], M Ayyadurai[5]
[1, 2, 3, 4, 5, 6]Department of Electronics and Communication Engineering
[1, 2, 3, 5, 6]Jeppiaar Maamallan Engineering College
[4]Aarupadai Veedu Institute of Technology

ABSTRACT

This Hybrid Solar PV-Wind Power generating system is coupled with Hybrid AC/DC Micro Grid, which have high reliability, high efficiency, low harmonics, low emissions & affordable cost. In this research, a Robust Optimal Power Management System (ROPMS) for an hybrid AC/DC Micro Grid is proposed to satisfy the power demand. The optimisation is formulated by Mixed Integer Linear Programming (MILP) method, by taking the uncertainties in resource output, power generation forecast errors, static & dynamic constraints into an account. The proposed system gives at most power utilization in an efficient manner by reducing the conversion losses by using only one bi-directional ac/dc converter. Since in this system ac power generation is directly utilized to the ac loads and dc power generated is directly utilized to the dc loads so there by storage and conversion losses and transmission losses is reduced to far extent. The effectiveness of the proposed system is evaluated by large number of

simulations runs based on dynamic model of the dynamic resources. This system is recommended for individual houses on remote areas. This system will work on both isolated and grid connected mode in order have power supply even if the power generation is insufficient and also to feed the excess power generated during favourable conditions or when there is no usage of power.

Keywords—*Mixed Integer Linear programming (MILP),Maximum Power Point Tracking(MPPT), AC/DC Grid, PV-Wind, Remote areas, Individual houses, Isolated and grid connected modes, fuel cells, battery, dc loads and ac loads.*

Paper ID - NCHS202003103: **Threat Intrusion Detection Based On Face Recognition Using Haar Cascade**

Dr. K. V. Karthikyen[1], Patric Anto Ebinezar[2], Melvin Jerold[2]
[1]Principal, [2]students
[1, 2]Department of Electronics and Communication Engineering
[1, 2]Jeppiaar Maamallan Engineering College

ABSTRACT

In this paper, security and authentication is an imperative part of many industries. In Real time, Human face recognition can performed in two stages such as, Face detection and Face recognition using raspberry pi. This paper implements "Haar-Cascade algorithm" is used to identify human faces which is organized in Open CV by Python language" and "Local binary pattern algorithm" to recognize faces. Collating with other existing algorithms, this classifier produces a high recognition rate even with varying expressions, efficient feature selection and low assortment of false positive features. Haar feature-based cascade classifier system utilizes only 200 features out of 6000 features to yield a recognition rate of 85-95%. Also as an addition sensing is done to begin the process so that power consumption is minimized

Key words – *face recognition, raspberry-pi, Haar – Cascade, LBPH, Open CV, recognition rate*

Paper ID - NCHS202003104: **A Survey on Dental Pantamograms Jawbone Cysts and Tumor Detection by Using Image Enhancement Techniques**

Meenakshisundaram.N[1],Lakshmi Narashimha.M.K[2] ,Deepak.N[2],Lokesh.R[2]
[1]Assistant professor,[2]Student
[1,2]Department of Electronics and Communication Engineering
[1,2]Jeppiaar Maamallan Engineering College
laksminarashimha004@gmail.com

ABSTRACT

As per the existing systems the dental decay can be recogonized at the final stage of loosing the tooth or an part of an tooth. The early recogonization of the dental decay can lead to cure of the dental issues at the initial stage and the further loss in the tooth or an part of the tooth. This pre

recogonization of the dental issues can be done by acquiring an test image of the patient and compared with an previous uploaded pictures of the normal tooth ,tooth at inital decay and tooth that is totally affected and to observe the abnormalities of the tooth before the critical point of loosing the tooth by using some methods of CNN and deeplearning. This paper put in plain words of such algorithms.

Keywords—*Segmentation, Landmark localization, U-net, Dense-net, Concealment, TRMbased error, Convolution Neural Network (CNN), deep learning, grab and cut, mammographic, tissue mimicking.*

Paper ID - NCHS202003105: **Intension classification of brain network by using EEG**

Karthikeyan.K.V[1],Abisheik.P[2], Gobirajan.K[2], Gokul Raj.M[2]
[1]Principal, [2]Student
[1, 2]Department of Electronics and Communication Engineering
[1, 2]Jeppiaar Maamallan Engineering College
abisheik.chinna98@gmail.com

ABSTRACT

As per the existing systems the dental decay can be recogonized at the final stage of loosing the tooth or an part of an tooth. The early recogonization of the dental decay can lead to cure of the dental issues at the initial stage and the further loss in the tooth or an part of the tooth. This pre recogonization of the dental issues can be done by acquiring an test image of the patient and compared with an previous uploaded pictures of the normal tooth, tooth at inital decay and tooth that is totally affected and to observe the abnormalities of the tooth before the critical point of loosing the tooth by using some methods of CNN and deep learning. This paper put in plain words of such algorithms.

Keywords—*Segmentation, Landmark localization, U-net, Dense-net, Concealment, TRMbased error, Convolution Neural Network (CNN), deep learning, grab and cut, mammographic, tissue mimicking.*

Paper ID - NCHS202003106: **Intelligent Transportation System by Controlling Traffic using Video Processing in Mat Lab**

Vijay.J[1], Akshaykumar.K[2], Jeevarathinam.K[3], Sriram.D[4]
[1]Principal, [2]Student
[1, 2, 3, 4]Department of Electronics and Communication Engineering
[1]Aarupadai Veedu Institute of Technology
[2, 3, 4]Jeppiaar Maamallan Engineering College
abisheik.chinna98@gmail.com

ABSTRACT

Laptop vision techniques square measure used for analysis of traffic police investigation videos that is gaining a lot of importance. This analysis of videos is helpful for public safety and for traffic

management. In recent time, there has been Associate in nursing exaggerated scope for analysis of traffic activity mechanically. Laptop based mostly police investigation algorithms and systems square measure won't to extract info from the videos that is additionally known as as Video analytics. The method of distinguishing instances of planet objects is understood as object detection. It detects the quantity of vehicles on every road and betting on the vehicles load on every road, this technique assigns optimized quantity of waiting time (red signal light) and period (green signal light). This technique could be a totally machine-driven system that may replace the traditional pre-determined fixed-time based mostly traffic system with a dynamically managed traffic system.

Keywords: *Object detection, video analysis, bounding box, holes filling, KNN classifier.*

Paper ID - NCHS202003112: **Arduino Based Autonomous Water Quality Monitoring Gadgetry**

Maninathan D[1], Muthamil R[2], Naveenkumar S[3], Pelleti Harshavardhan[4], Aiswarya V[5]
Agni College of Technology, Chennai, Tamil nadu.

ABSTRACT

Water being a universal solvent faces extreme variations in its quality at diverse places depending on the condition of its source and the treatment it receives. The quality of this holy source is bound to meet Environmental Protection Agency (E.P.A) standards. Periodical analysis of the quality of water should be routinely executed to maintain and monitor its purity. Turbidity, Temperature and pH are the most prominent parameters that define water's quality and the existing mode of challenging these parameters has always been manual collection of samples and sending them over to laboratory for water quality check, which procrastinates the process by a few days. The proposed system ensures to provide a real-time, on-spot and speedy and effective water quality analysis by automatically monitoring the turbidity, Temperature and pH of water through sensors and intimates the remote user of even the slightest change in the quality. All the existing systems had aimed to cover a small area but the proposed work not only automates the entire process but also focuses on covering wider boundaries and larger perimeters and is hugely economical too.

Paper ID - NCHS202003113: **Power Control of Doubly Fed Induction Generator Using DPC Method**

Preethkumar.K[1], Dinesh.G[2]
[1, 2]Department of Electrical and Electronics Engineering
[1, 2]Jeppiaar SRR Engineering College

ABSTRACT

In this paper, the power control of doubly fed induction generator (DFIG) used in wind power conversion system is done by a method called direct power control method. In this designed system, the

rotor voltages of DFIG are controlled based on active and reactive power at each switching period. An experimental test bed has been established in order to test the proposed control method. This experimental setup consist of a DFIG, induction motor with a variable speed driver and a bidirectional back to back converter marked with rotor side control (RSC) and grid side control i(GSC). In order to control the system a TMS320F2812 microcontroller is also used. The proposed control algorithm is done using MATLAB and SIMULINK program. The outcome of the experiment shows that stator's active and reactive power of DFIG successfully follow the reference active and reactive power value under different operating condition such as for different speed of rotor and active and reactive powers. It is concluded that harmonic disorders of stator current are under the behavior of proposed control algorithm.

Keywords-*doubly fed induction generator, direct power control, wind energy conversion*

Paper ID - NCHS202003114: **Monitoring of Infant Safety and security using GSM and Face recognition devices**

K.H.Shakthi Murugan[1], Kalai Arasan.D[2], Kavin.L[2], Kiran Kumar.S[2]
[1]Assistant Professor, [2]Student
[1,2]Department of Electronics and Communication Engineering
[1,2]Jeppiaar Maamallan Engineering College
kalaimoorthy.d1998@gmail.com

ABSTRACT

Children and women are facing many security problems nowadays. So in such cases they feel handicap and need help to protect them. This paper suggests a new technology for a child safety with one touch system using GSM. Here we introduce a device which ensures the protection of child. The problems we have overcome here using Arduino UNO, Heart beat sensor, Temperature, GSM, buzzer, motor and camera .In such case Heart beat Sensor track the pulse rate and temperature sensor used sense the temperature rate for respective child & sends emergency message using GSM .The system proven that it is providing complete security to kids wherever we are using it .In this proposed system the camera is used to detect the unauthorized person .

Keywords—*face recognition, camera, Arduino uno, heart beat sensor, temperature sensor, GSM sim900, buzzer, dc motor, embedded c, ardeini IDE.*

Paper ID - NCHS202003115: **Smart Land Wirts Chaft**

[1]PreethKumar K, [2]Arun R, [3]Dinesh G, [4]Dr. S. Jaanaa Rubavathy
[1, 2, 3]UG Scholar, [4]Assistant Professor
[1, 2, 3, 4]B.E. Electrical and Electronics Engineering
[1, 2, 3, 4]Jeppiaar SRR Engineering college, Chennai, India.
preeth.preethkrishnan@gmail.com, arun11021999@gmail.com, callmegd0201@gmail.com, jaanaasrreee@gmail.com

ABSTRACT

The proposed system under the smart objective is achieved by the use of various sensors, detectors and display units where the person in charge is notified constantly via GSM, Bluetooth and IoT. The system works under the control of Arduino basis where the different sensors work for each and every aspect consider and thus the proposed system can be productive. Considering the factors of temperature, moisture, presence of gases, humidity, water level in wells, irrigation, quality of air, where all these are detected and further notified to the farmer. This model is proposed with the programming language of C under which all the parameter limits are given, and the message notifications are directly atomized to the farmer's mobile phone via the GSM module, Bluetooth module and IoT module. In order to detect the water level in the well and opening of the gate way to the field, servomotors, pumps, ultrasonic sensors are also used such that flooding can be prevented. Thus, a whole spread smart based agricultural land security can be made productive via this proposed system. It also provides a smart way of farming any particular in agriculture and thus productivity can be achieved under less man power requirement and also increases the safety to the land under cultivation.

Keywords—*Smart Agriculture, Water Monitoring, IoT platform, MS (Moisture Sensor), TS (Temperature Sensor), HS(Humidity Sensor), GS (Gas Sensor), Servo System, BT (Bluetooth Module), GSM (Global System for Mobile Communication), Development Board.*

Paper ID - NCHS202003116: **Pipelined CORDIC Based Low Power Divider Architecture for DSP Applications**

V.Vannammal@Revathy[1], B.Vijayalakshmi[2], Mohammed Wajid Khan[3]
[1, 2, 3]Department of Electronics & Communication Engineering,
[1, 2, 3]B.S.Abdur Rahman Crescent Institute of Science and Technology, Chennai, Tamil Nadu, India

ABSTRACT

In this paper, we propose a low power divider to compute division using coordinate rotation digital computer (CORDIC). In recent, many researchers have proposed the algorithms to carry out the computation task in hardware instead of software, with the aim to increase the performance of computation. Here the proposed system eliminates the requirement of a separate hardware for division computation. Without compromising the computational speed, throughput and accuracy

proposed system can achieve division operation using CORDIC algorithm. To achieve a power reduction in the proposed divider a Pipelined CORDIC architecture is used. By using a Pipelined CORDIC without increasing the area in FPGA power reduction is achieved. The CORDIC algorithm is translated into Verilog Hardware Description Language that simulated using Xilinx ISE design suite 14.4.

Keywords: *CORDIC, Division, Pipelined CORDIC, Verilog HDL, Xilinx.*

Paper ID - NCHS202003117: **Concealment of Data with MSB Using Modified Secure Hash Algorithm**

Mrs.P.Srividdhya[1], Mr.K.Dhanasekaran[2]
[1,2]Assistant Professor
[1,2]Department of Electronics and Communication Engineering,
Mailam Engineering College, Mailam.

ABSTRACT

Data concealment is additionally necessary as a result of the key message that will share solely concealment of the info with image, audio, or video signal. The hacker will simply attack the message and take the key message. Therefore additional powerful concealment methodology and rule square measure needed. During this paper, we tend to discuss like that one amongst the rule. Modified secure hash algorithm that is that the advanced version of a message digest and secure hash function and conjointly exploitation the most significant bits (MSB) for knowledge concealment. Principally hackers attack solely Least significant Bits (LSB) simply however attack of MSB many times its injury the total message. Therefore finally concealment the info in MSB with modified hash algorithm results shows that not solely can do smart results and conjointly excellent concealment ability from completely different attacks with effective output.

Index Terms- *Data concealment, Modified secure hash algorithm, Most significant bits (MSB), Least Significant Bits (LSB), Message digest, attack, hacker.*

Paper ID - NCHS202003118: **LDC based Finger Vein Recognition using K-means Classification**

T. Jaya[1], Dharsan. S[2], Hemapriya. S[3]
[1]Assistant Professor, [2, 3]UG Scholar
[1, 2, 3]Department of Electronics and Communication Engineering,
[1, 2, 3]Vels Institute of Science, Technology and Advanced Studies, (VISTAS), Chennai.

ABSTRACT

Finger vein authentication is one of the most secure and efficient forms of biometric recognition in security platforms. This biometric authentication method is more trustworthy than token-based

authenticate methods and knowledge-based methods succeed in achieving more quality and offering a satisfactory user experience. The recognition of finger vein makes use of the vein images acquired which undergoes segmentation. The faulty segmentation may result in demean of the recognition exactitude. The proposed system is finger vein recognition system-based K-mean segmentation technique along with a direction based local descriptor called Local Directional Code (LDC). The proposed system is to improve the recognition accuracy and efficiency in the finger vein recognition system.

Keywords: *Finger vein recognition, K-means classification technique, Local Directional Code, Image enhancement.*

Paper ID - NCHS202003119: **Engine Position Driver Using Generic Timer Module for AURIX Microcontroller – TC275X**

Chitra. D[1], Anuradha[2], Mohameed Abdul Kadhar[3]
[1, 2, 3]Department of Electronics & Communication Engineering,
[1, 2, 3]B.S.Abdur Rahman Crescent Institute of Science and Technology, Chennai, Tamil Nadu, India

ABSTRACT

In Automotive Industry, the Engine Management System (EMS) is used to control the running of an engine by monitoring the engine speed and ensuring optimal engine performance. It is used in Powertrain application and also helps to maintain proper co-ordination within ignition system, fuel injection and emission control. Engine management low-level drivers, which comprise of all the functionality for the crankshaft and camshaft management, with Generic Timer Module (GTM) is introduced with AURIX™ family of products from Infineon. The Engine Management system provides solution for the angle and timing pulses responsible for ignition and injection output implementation, in specific use cases like, acceleration/deceleration and constant speed.

Keywords— *Aurix microcontroller, Crank position, cam position, Engine functioning, flywheel, Power train & chassis.*

Paper ID - NCHS202003120: **Design & simulation of efficient DC-DC converter using Switched capacitor**

A. Shifayanoor[1], Dr.S. Kaja Mohideen[2]
[1, 2]Department of Electronics & Communication Engineering,
[1, 2]B.S.Abdur Rahman Crescent Institute of Science and Technology, Chennai, Tamil Nadu, India

ABSTRACT

Power management unit is one of the key component of Switched capacitor based DC-DC converter. DC-DC converter provides the constant and smooth output voltage for System on chip and electronic devices. This paper presents the efficient DC-DC converter using switched capacitor. Three different

gain topologies are configured to produce the output voltages of 0.4V, 0.6V and 0.8V from 1.2v input voltage. To maximize the efficiency using comparator and four phase clock generation unit. This design is implemented by using 90nm CMOS technology with an efficiency of 97% at 0.01mA load current.

Keywords-*DC-DC converter; power management unit; Switched capacitor.*

Paper ID - NCHS202003121: **IOT Based Smart Farming and Crop Analysis to Yield Increase in Food Production**

Sujitha Arasi B, Saranya Devi B, Priyadharshini M, Aida Jones
Department of Electronics and Communication Engineering, KCG College of Technology, Chennai, India
sujithabaskaran10@gmail.com, aida.ece@kcgcollege.com

ABSTRACT

Diabetic retinopathy is main cause of the vision-loss in adults. The diabetic retinopathy consists of background vessels, retina, fundus images, vessels and non-vessels images. Due to diabetic retinopathy, around 4.2 million of adults had the diabetic retinopathy and 655,000 had the vision-loss, which are maximized every day. It is said to be one of the most common complication of the DM (Diabetes Mellitus). The treatment of diabetic retinopathy is not easy as there is no symptom presented at early phase and patients hardly notice the vision-loss. Most of the people couldn't recognize that they have the diabetic retinopathy until the disease is started to affect their eye that generally occurs in final phase. As an outcome, most of the people might not go via the treatment. Therefore, the scheme of coordinated management is very crucial to address the clinical challenges of the diabetic retinopathy and preventing its development. Early classification and identification of retinal images are being very serious concern to research community. In our proposed system we are going to identify the presence of diabetic retinopathy from retinal fundus images using MATLAB R2013a.

Keywords—*Diabetic retinopathy, Retinal fundus images, Diabetic Mellitus, MATLAB.*

Paper ID - NCHS202003122: **Detection of Diabetic Retinopathy using Masking Algorithm**

Dinesh Raja. S[1], Aravind. R[2], Vijayalakshmi.P[3] & Dr. Rajendran.V[4]
[1, 2]UG Scholar. [3]Asst. Professor, [4]Professor & Director
[1, 2, 3, 4]Dept. of ECE, Vels Institute of Science, Technology and Advanced Studies, (VISTAS)
[1]dineshrajasakthivel@gmail.com, [2]aravindsrk11@gmail.com, [3]viji.se@velsuniv.ac.in

ABSTRACT

As the world is developing towards new technology such as civic technology, crypto currency, cognitive cloud computing and artificial intelligence it is very much essential that there is a development needed in agriculture sector due to increase in population and decline food production due to various

environmental factors. Some developments have been done in the field of agriculture and most of the developments that are network protocol based on placing various sensors in environment field and the work of sensors is to detect such as temperature, pressure, humidity, soil moisture, concentration of gas surrounding so on. Sensing the environment by using sensors is not a great development in yielding crops, the automation must be implemented to helps in yielding more crops and development in agriculture too. So IOT based system is implemented to design farming system which ultimately yields better production by smart monitoring so existing food needs due to population diversity in coming years can be resolved.

Keywords: *IOT, Smart Farm, Sensors, Embedded System, WSN.*

Paper ID - NCHS202003123: **Early Prediction and Analysis of Heart Diseases Using Machine Learning Techniques**

Jarius Anston.M[1], Manoj Kumaran. R[2], Vijayalakshmi.P[3] & Dr. Rajendran.V[4]
[1, 2]UG Scholar. [3]Asst. Professor, [4]Professor & Director
[1, 2, 3, 4]Dept. of ECE, Vels Institute of Science, Technology and Advanced Studies, (VISTAS)
[1]dineshrajasakthivel@gmail.com, [2]aravindsrk11@gmail.com, [3]viji.se@velsuniv.ac.in

ABSTRACT

Machine learning is being heavily used in all the sectors including manufacturing, healthcare, research and development etc. It is a part of data science wherein the computer systems are made to learn from the different data sets on the basis of patterns generated from the datasets. Since ML is one of the most disruptive technologies of this generation, a new approach is proposed in this paper which helps to predict the heart disease occurrence in a patient based on some important characteristics which are best suited based on our data set that are collected using machine learning algorithm. Since heart disease is the one of the most common disease in now days, different attributes which can relate to this heart diseases are used which well suited to predict the nature of heart disease. Naive Bayes, algorithm is analyzed on dataset based on risk factors. The decision trees and combination of algorithms for the prediction of heart disease based on the above attributes is also used in this proposed method. The results shows that when the dataset is small naive Bayes algorithm gives the accurate results and when the dataset is large decision trees gives the accurate results. Thus the proposed method helps to significantly detect the abnormality in early stages, so the human life can save and also kept under control.

Keywords: *Decision tree, Data mining, Heart Disease Prediction, Naïve Bayes, Machine learning.*

Paper ID - NCHS202003124: **Industry Modbus Protocol Communication Based Master and Slave Transmitter and Receiver System**

M.SowmiyaManoj[1], S.Balaji[2]
[1, 2]Assistant Professor
[1, 2]Department of Electronics and Communication Engineering,
BIHER, Tamilnadu, India
[1]sowmiyabaskar67@gmail.com, [2]bala.sripathy@gmail.com

ABSTRACT

In Power plant control of the inserted information related framework had been risen up out of concentrated control unit, disseminated type control into field transport control. The paper makes new kind of a plan program consolidating Modbus correspondence convention with 8-bit information AVR chip as its slave. The general whole structure framework and figures Modbus type Communication Protocols were developed where circuits interfaced with RS485 is appeared implanted continuous sort working framework presents the correspondence between ace station and slaves station contingent upon Modbus RTU correspondence convention, dialog the advancement of Cyclic Redundancy method Check in Modbus Communications Protocol. Investigations answer framework can execute and create the information procurement and transmission dependably. Watchwords Modbus Communication Protocol, information obtaining, AVR, RS485.

Abbreviations—*AVR (Alf and vegard'srisc); LCD (liquid crystal display)*

Paper ID - NCHS202003125: **Identification & Analysis of Palm Print In Biometric Authentication System Using K-NN Algorithm**

Sowmiya Manoj.M[1], Mathiukhonang[2], A.Charan Sai[3]
[1, 2]Assistant Professor
[1, 2, 3]Department of Electronics and Communication Engineering,
[1, 2, 3]Bharath Institute Of Higher Education and Research, Tamilnadu, India
[1]sowmiyabaskar67@gmail.com

ABSTRACT

Now a days information security is of utmost important one can be at the risk of information or identity theft. To avoid this biometric authentication is used to categorise and identify behavioural characteristics of a person and give access. Palm recognition plays a crucial role in identification of person based on the whole geometry of the hand, The main objective is to identify and distinguish the scanned palm. Main work of the palm recognition is pre-processing of the image and extracting the features using clustering algorithm and classification is used and performance is compared in both cases

---

Paper ID - NCHS202003126: **Early Breast Cancer Detection through Reflection Coefficient and Mass Density Using X-Ray Images in Python**

DR.G.R Jothilaksmi[1], Shalni kumara[2], A. Santhiya[2]
[1]Associate Professor, [2]UG scholar
[1,2]Department of ECE, Vels Institute of Science, Technology & Advanced Studies, (VISTAS), Chennai
Shalunisha4665@gmail.com, jothi.se@velsuniv.ac.in

ABSTRACT

Breast cancer is the lethal cancer manifest in ladies. During current years, due to delayed diagnosis of breast cancer it has been turned clear that the impermanence rate of women is expanding by the analysis of distinct pharmaceutical institutions. Hence, the rathe instance of micro calcification is mandatory to spot through a motorized algorithm, that directly help in minimizing the deceptive forecast through Python coding technology to the specialists and leech. To calculate its physical attributes, we recognize the model of a micro calcification through a preferred new algorithm in this proposed work. The mass density and reflection coefficient are the examined physical attributes of the binned digital mammogram Images. The companionship of malignant micro calcification especially affirms the measurement of physical attributes. Eventually, introducing physical attributes through mapping and thresholding technology, a 3D forecast of RoI is acquired with respect to length in mm. Applying the 3D- forecasted sight, measurement of a micro calcification is resolute. The normal and abnormal mammogram images presenting micro calcification will be verified eventually using this algorithm. Along with the size calculation, the advanced algorithm will better classify the contemplated abnormal and normal images as input image with the avail of two physical attributes. Python is a common- purpose Interactive, high level, Interpreted, Object-Oriented scripting language. Fully dynamic type system and automatic memory management. It is highly productive as compared to other programming languages. Python can be used to develop prototypes. Most automation, data mining and big platform relay on python.

Keywords: *reflection coefficient, binning, Digital mammogram, pattern recognition, mass density, micro calcification, 3D-projection, micro calcification of size measurement.*

Paper ID - NCHS202003127: **Cyst's 3D projection of sonomammogram using physical parameters - reflection coefficient and mass density in Python**

DR.G.R Jothilaksmi[1], V.Adarsh, E[2]. Ram Natesh[2],
[1]Associate Professor, [2]UG scholar
[1,2]Department of ECE, Vels Institute of Science, Technology & Advanced Studies, (VISTAS), Chennai
adarshterrance@gmail.com, jothi.se@velsuniv.ac.in

ABSTRACT

This paper deals with breast characterization in step with inner tissue characteristics in a current issue to help radioscopy in detecting carcinoma primarily. Discomfort carcinoma is due to its vital

factor and it is also demonstrated in girls with impenetrable breast. Occurrence of micro calcification at early stages by the caution of physical characteristics is through the work of an automatic algorithm. Compared to its lesion portion, the Sono mammogram image with its cyst base is considered to be bin twice. The minimum and maximum range of the mass density (0.92 to 1.14g/cm3) is searched out through the reflection co-efficient which is used to substantiate its micro-calcification. The reflection co- efficient is based for portion as the thresholding proper. The lesion portion and the signatures is lived by the segment.

Keywords: *Feature Extraction, ultrasound, Cyst base, Lesion Part, Mass density, Reflection Coefficient, Region of interest, Segmentation.*

Paper ID - NCHS202003128: **Optimizing Road Traffic System Using IOT Sensor Networks**

Mercy Theresa M.[@1], Jesudoss A. [*2], Lakshmanan L.[#3], Christy A.[&4], Sardar Maran[~5]
Associate Professor[@1], Dept. of ECE, Prince Shri Venkateswara Padmavathy Engineering College
Associate Professor[,2], Professors[#3, &4, ~5], Department of CSE, Sathyabama Institute of Science and Technology, Chennai, Tamil Nadu, India*
*mercyjesudossa@gmail.com[&1], jesudossas@gmail.com[*2], laks14@yahoo.com[#3], ac.christy[&4], sardarmaran@gmail.com[~5]*

ABSTRACT

In metropolitan cities, road traffic at the peak time is very high. The conventional automatic traffic signal in most of the signal crossing lane always shows "Green" even though there is no vehicle is crossed and it will create unnecessary traffic on the other side where the signal is to be turned green. This is because the traffic signal control works based on the timer which is predefined by the Traffic Management System.

The Proposed Intelligent Traffic Optimization System use piezoelectric sensors to monitor the non-traffic lane which is showing green signal and turn the signal automatically to red. Subsequently, it recognize heavy traffic lane and turn to green. It helps to make the smooth movement of vehicle in all the lanes without any traffic congestion in that location. It will make the vehicles to pass the signal without waiting for a long time. It will also guide pedestrians to cross the lane with correct signal indication.

Keywords-*Road Traffic Optimization – Piezoelectric Sensor – IoT*

Paper ID - NCHS202003129: **Electrochemical Sensors Using CNT'S (Review)**

Guna Shankar Rimmalapudi[1], R. Indumathi[2], R. Vinodhini[3]
[1, 2, 3]Assistant Professor
[1, 2, 3]Department of Biomedical Engineering,
[1, 2, 3]Bharath Institute of Higher Education and Research,
guna099213@gmail.com, indhu.maheshradha@gmail.com, vinodhiniravi44@gmail.com

ABSTRACT

The Carbon Nano-tubes are used as biosensor due to their ultra-sensitive and ultra-fast sensing nature. The CNTs exhibit excellent mechanical, electrical and electro chemical properties due the above reasons they got a stimulated interest in the application of CNTs in biosensors. This review on recent research in field of CNTs based biosensors. The structure, functions, and their properties. This review highlights of different methods in which CNTs are prepared for the use of biosensors and in addition future research and development in CNTs based biosensor in the field of medical science. CNTs paly's important role in the electrochemical biosensors, immune-sensors, and DNA biosensors. Here we discusses about the factors effects the practical use of CNTs as biosensors. After an overview on CNTs based biosensors and their structures and properties we summarize the application of CNT based electrochemical sensors and biosensors.

Key Words: *Carbon Nano-tubes; Electro-chemical biosensors.*

Paper ID - NCHS202003130: **Identification and classification of Brain Tumor using Image Fusion and Neural network**

Sonali Srivastava,
II Year M.Tech ES, Department of ECE,
Bharath Institute of Higher Education and Research,
sonali.deos@gmail.com

ABSTRACT

PET (Positron Emission Tomography) and MRI (Magnetic Resonance Imagining) images of brain are fused with the help of Stationary Wavelet Transform. After the decomposition of wavelet, fusion of gray matter (GM) and with the application of our method, a good and clear fused result can be got, with the adjustment in structural data of gray matter (GM) and addition of spectral information in WM(white Matter) area. There are three datasets used for the comparison and testing i.e.: normal coronal, normal axial, Alzheimer's disease images of brain. In the term of average gradient and spectral discrepancy our fused method is performed better quantitative and visually both quantitatively.

KEY WORDS: *Feed Forward Neural Network (FFNN), Positron Emission Tomography (PET), Magnetic Resonance Imagining (MRI), Skull Stripping, Segmentation, Stationary Wavelet Transform (SWT), Thresholding.*

Paper ID - NCHS202003131: **Implementation OF Li-Fi Technology for Optical Data Transfer in Underwater System.**

Vijay.S,
II Year M.Tech ES, Department of ECE,
Bharath Institute of Higher Education and Research,
vijayece19@gmail.com

ABSTRACT

In recent times the underwater acoustic communication plays a vital role in the field of wireless communication. Underwater acoustic communication is used for the monitoring of obstacles and to protect the endangered species. In the earlier systems, electromagnetic waves were used, which was found to be with less efficiency. The proposed system is devoid of all such deformities and has better efficiency. This system presents the design and implementation of underwater communication through Li-Fi. The data or information is sent from the transmitter submarine to the receiver submarine. The system developed provides secure communication between submarines. The voice signal, which is transmitted using light waves of low noise. Initially, the voice signal is converted into digital values and these digital data values are converted to RGB values. RGB values obtained are transmitted as light waves of receiver submarines.

Keywords—*Li-fi, underwater communication, Acoustic.*

Paper ID - NCHS202003132: **Public Water Supply Grid Monitoring to Avoid Tampering & Water Man Fraud Using IOT.**

B.Hemalatha, P.Sumanth, P.Hanikant
Department of ECE,
Bharath Institute of Higher Education and Research, Chennai, India
hema.contact@gmail.com, p.sumanth1396@gmail.com

ABSTRACT

This research paper describes now days in urban areas the water supply to residence and commercial establishments are provided at a fixed flow rate. There are certain incidents that excess water is drawn by the customer or other users unofficially then it is considered as water theft. So in this project we propose a method for developing an embedded based remote water monitoring and theft detection and prevention system by taking the data base of water supply at the consumer end. The overall

objective of a distribution system is to deliver wholesome water to the consumer at particular area and in sufficient quantity and achieve continuity and maximum coverage at affordable cost.
To attain this objective the organization has to evolve operating procedures to ensure that the system can be operated satisfactorily, function efficiently and continuously as far as possible at lowest cost. All the details will be shown in the web server using IOT module connected to the controller. So that the authorities can take necessary action in case of misuse. This is an advanced, trouble-free, and fit and forgets system for water board. By using all these malfunctioning can be avoided.
Keywords: *IOT, LCD, MICROCONTROLLER, LOGIC GATES.*

Paper ID - NCHS202003133: **Arduino Based Radioactive Tracking System**

B.Hemalatha, Hari Narayana.N
Department of ECE,
Bharath Institute of Higher Education and Research, Chennai, India
hema.contact@gmail.com, harinarayana312@gmail.com

ABSTRACT

There is a clear need to strengthen security measures to prevent any malevolent use or accidental misuse of radioactive sources. Some of these radioactive sources are regularly transported outside of office or laboratory premises for work and consultation purposes. This paper present the initial development of radioactive source tracking system, which combined Arduino microcontroller, Global Positioning System (GPS) and Global System for Mobile communication (GSM) technologies. The tracking system will help the owner to monitor the movement of the radioactive sources. Currently, the system is capable of tracking the movement of radioactive source through the GPS satellite signals. The GPS co-ordinate could either be transmitted to headquarters at fixed interval via Short Messaging Service (SMS) to enable real time monitoring, or stored in a memory card for offline monitoring and data logging.

Paper ID - NCHS202003134: **Design of Full Adder Using GDI Technique**

[1]Tonie Raalph .C, [2]Alwin Revanth P, [3]Thennarasu P, [4]Dr. R. Uma
Department of ECE,
[1, 2, 3]UG Scholar, [4]Professor
[1, 2, 3, 4]Jeppiaar Institute of Technology

ABSTRACT

This paper explains the implementation of full adder using GDI technique. High performance full adder plays a vital role in Application Specific Integrated Circuit design [1]. Generally adders are used to

perform arithmetic operations for various applications such as digital signal processing, microprocessors etc. The realization is done using Gate Diffusion Input. The GDI technique is uses only fewer transistors compared to CMOS and other logical circuit it is low power consumption. Hence this is more reliable. This paper shows that GDI is one of the best methods for designing a circuit.

Paper ID - NCHS202003139: **Receiver Diversity Combining Using Evolutionary Algorithms in Rayleigh Fading Channel**

[1]Reena Gladius.K, [2]Bhavani Sruthi.S, [3]Asfiya Naaz.A.I, [4]R.Rubala
Department of ECE,
[1, 2, 3]UG Scholar, [4]Assistant Professor
[1, 2, 3, 4]Jeppiaar Institute of Technology

ABSTRACT

In decent variety joining at the recipient, the yield signal-to-commotion proportion (SNR) is regularly augmented by utilizing the maximal proportion consolidating (MRC) given that the channel is consummately evaluated at the beneficiary. Nonetheless, channel estimation is once in a while immaculate inpractice, which results in deterio rating the system performance. In this paper, an imperialistic competitive algorithm(ICA)is proposed and contrasted and two other developmental based calculations, specifically, molecule swarm streamlining (PSO) and hereditary calculation (GA), for assorted variety joining of signs traversing the flawed channels. The proposed calculation modifies the combiner weights of the received signal components in such a way that maximizes the SNR and minimizes the bit error rate(BER). The outcomes demonstrate that the proposed technique wipes out the need of channel estimation and can beat the traditional diversity combining methods.

Paper ID - NCHS202003140: **Arduino Based Automatic Solar Tracking System with Mirrors**

S.V.Surya Prabha, S.Preetha, S.Mary Cynthia,
Department of ECE,
Jeppiaar Institute of Technology

ABSTRACT

Due to increase in population and industries electricity demand is increasing day by day. Solar power conversion to electricity through PV cells has become more favored but high price of cells and lower efficiency has obstructed its use in developing countries. One of the way to increase the efficiency of solar panels is by solar tracking. Through tracking, there will be increased exposure of the panel to the sun, making it have increased power output. Low cost reflecting mirrors, lenses and light focusing

concentrators may also increase the power output. These mirrors concentrate the light intensity over the whole surface of the panel. Mirror is used as booster to maximize the efficiency. This paper presents the comparison performance of a PV module without tracking and with tracking along with mirror.

Keywords— *solar panel, solar tracking, servo motor, sensor, Arduino.*

Paper ID - NCHS202003141: **Fall Detection with Ambulance Service**

Shine H, Kishan Chandra G
Department of Computer Science Engineering
Jeppiaar Institute of Technology
shineh@jeppiaarinistitute.org, kishanch2425@gmail.com

ABSTRACT

An application called a fall detection monitoring system with the identification of the accident location for the people who needs help is developed with Eclipse. In emergency medical services, the lag time between injury and treatment is one of the most critical parameters with respect to patient survivability. Ambulance services aim to maximize the likelihood of prompt medical treatment to prevent death. The main objective of the system is to reduce the time until emergency personnel responds to falls, especially when the victim is unconscious or delirious. A novel algorithm as well as architecture for the fall accident detection and corresponding wide area rescue system based on a smart phone and the fourth generation (4G) networks. To realize the fall detection algorithm, the angles acquired by the electronic compass and the waveform sequence of the tri-axial accelerometer on the smart phone are used as the system inputs. Once a fall accident event is detected, the user's position can be acquired by the global positioning system (GPS) or the assisted GPS, and sent to the coordinator via the 4G communication network so that the user can get medical help immediately

Keywords: *Accident appears Mobile fall down, Application run background, Send msg to ambulance.*

Paper ID - NCHS202003142: **Portable Low Vision Video Magnifier with Voice Output**

India B[1], Asfiya Naaz A I[2]. Reena Gladius K[3], Mary Cynthia S[4]
Department of ECE,
[1, 2, 3]UG Scholar, [4]Assistant Professor
[1, 2, 3, 4]Jeppiaar Institute of Technology

ABSTRACT

A portable Low Vision Video Magnifier is a device for people who disabled from partially visually challenged. It is used to magnify the printed text document into an enlarged one and then changed the

actual background color into contrast color, whichever the person feels comfortable. Another added feature is image to speech that scans the entire document and with help of optical character recognition is ready to convert into voice output. This paper represents the application oriented process that gives the accurate magnification in LCD display and image to voice output from speaker. Thus it gives a proper guidance and self-confidence for low vision people.

Keywords: *Low Vision, Magnification, Image to Speech, Raspberry pi 3, Magnification signal Processing, Voice Processing, Touchable LED Display, Speaker, OPENCV, and Python.*

Paper ID - NCHS202003143: **Coal Mine Safety System Using Raspberry Pi**

A.Parimala[1], D.Naveen kumar[2], S.Hariharan[3], M.Ramkumar[4]
Department of ECE,
[2, 3, 4]UG Scholar, [1]Assistant Professor
[1, 2, 3, 4]Jeppiaar Institute of Technology

ABSTRACT

A smart helmet has been developed that is able to detect the hazardous events in the mine industry. In the development of helmet, we have considered three main types of hazard such as air quality, helmet removal, and collision. The first is the concentration level of the hazardous gases such as CO, SO2, NO2, and particulate matter. The second hazardous event was classified as a miner removing the mining helmet off their head. Temperature and humidity sensor are used to measure the surrounding environment condition. The third hazardous event is defined as an event where miners are struck by an object against the head with a force. An accelerometer was used to measure the acceleration of the head and the HIC was calculated in software. Tests were successfully done to calibrate the accelerometer. The experimental prototype consists of three sensors namely gas, infra-red and proximity sensor for their usage and the sensor data are monitored in pc via ZigBee transceiver unit. From IoT server, sms are sent to the particular person.

Keywords: *Arduino, sensors, zig-bee.*

Paper ID - NCHS202003144: **Detecting Lung Malignant growth using ANN**

N R Gladiss Merlin
Associate Professor, Department of CSE,
Jeppiaar Institute of Technology
gladissmerlin@jepiaarinstitute.org

ABSTRACT

Lung Tumors can be kindhearted or threatening. Kindhearted tumors can be evacuated and don't spread to the pieces of the body. Threatening tumors regularly can spread forcefully and cause

passing. Early finding of lung disease can help specialists to treat patients and keep them alive. The illnesses, for example, pleural emission and ordinary lung are distinguished and arranged right now. This paper presents a PC helped grouping Method in Computer Tomography (CT) Images of lungs created utilizing ANN. The reason for the work is to identify and order the lung infections by viable component extraction through a Transform method called Gabor Wavelet and LBP. NN classification has been designed for Artificial Neural Network of ILD patterns, by which malignant melanoma and benign lung cancer could be detected and classified and the condition of the lung can be identified as normal or abnormal.

Paper ID - NCHS202003145: **Dynamic Load Balancing in LTE Network**

Asfiya Naaz A.I[1], India B.S[2], Bhavani Sruthi.S[3], R. Rubala4,
[1, 2, 3]UG Scholar, [4]Assistant Professor
[1, 2, 3, 4]Jeppiaar Institute of Technology

ABSTRACT

To accommodate excessive charge together plus capacity in the fifth Generation communication systems, tailored usage of Time-Frequency resource. Initially, we think about joint transmission which is one of the coordinated approaches, with which a consumer can also be concurrently served by Heterogeneous base stations. Second, we document for, the merging relation between the central station load levels that are subordinate to every different due to inter-cell interference. We formulate two optimization issues, lost and most load minimization. we suggest a combined integer linear programming primarily based schemes by way of skill of linear. This strategy additionally leads to a spring pattern for achievement law. Then, we derive a set of sectional action. Attainment of the conditions assurance fulfills the improvement of each Minimum of sum load and Minimum of maximum. The key result is then developed based totally on the actions. Simulation consequences are contributed to revealing the effectiveness of the approaches.

Key Words: *joint transmission, cellular networks, base station, interference, linear User Equipment.*

Paper ID - NCHS202003146: **Proper Condition and Stability of Bridge Is Monitored Using Raspberry Pi Processor**

Gopika CA[1], Sangavi L[2], Mrs.S.Mary Cynthia[3]
[1, 2]UG Scholar, [3]Assistant Professor
[1, 2, 3, 4]Department of ECE
[1, 2, 3, 4]Jeppiaar Institute of Technology

ABSTRACT

Advancements in sensor technology have brought the automated real-time bridge health monitoring system. Many long span bridges in Korea and in Japan have adopted this real-time health monitoring

system. However, current system uses complicated and high cost wired network amongst sensors in the bridge and high cost optical cable between the bridge and the management center, which increases the overall cost of installation and maintenance cost of health monitoring system. The complicated wiring also makes the installation and repair/replacement process difficult and expensive. In this paper we suggest new idea of monitoring the bridge for safety road travel by using raspberry pi with some of the sensor. The processor intimate condition of bridge to control room using GSM if the bridge is not able to bear the weight or any other problem,. Sensor technologies have made the monitoring process more Accurate and fast. GSM is suggested to send the data to the remote maintenance location in which the maintenance office is located

Index Terms- *Sensors, GSM (Global System for Mobile communication), Bridge Monitoring System, Rasberry Pi.*

Paper ID - NCHS202003147: **Recursive Multiplier and Comparison between Array, Wallace and DADDA Multipliers**

Bhavani Sruthi. S[1], Reena Gladius. K[2], India. B. S[3], Dr. Uma. R[4]
[1, 2, 3]UG Scholar, [4]Professor
[1, 2, 3, 4]Department of ECE
[1, 2, 3, 4]Jeppiaar Institute of Technology

ABSTRACT

This mini project vividly aims in bringing out the comparison between different types of multipliers such as array multiplier, Wallace multiplier and dada multiplier. This comparison brings out the difference in power consumption, slice utilization, and combinational delay among the different multipliers .This has been practically simulated and implemented using XILINX SOFTWARE, Spartran 3E xc6slx4-3tqg144 and the hardware description language code is done in Verilog module. The main aim of the mini project is to compare the conventional multiplier with recursive multiplier and bring out the betterment in power efficiency, reduced code length and reduced time delay for execution.

Paper ID - NCHS202003149: **Assessment of Positive and Negative States of Children with Autism Spectrum Disorder Using Electrocardiogram Signals and Machine Learning Algorithms**

Dr. S.Jerritta[1], Thrisha J[2], Harinie JR[2]
[1]Associate Professor, [2]UG Scholar,
[1, 2, 3, 4]Dept. of ECE, Vels Institute of Science, Technology and Advanced Studies, (VISTAS)
jerritta.se@velsuniv.ac.in, thrisha612@gmail.com, jrharinie@gmail.com

ABSTRACT

The Children with Autism Spectrum Disorder (ASD) have lack Intellectual Development (Thinking) and have impairment in their functional languages (Way of behaving). The recently estimated prevalence

of ASD in India indicates that 1 in 125 children in the age group of 3-6 years and 1 in 85 children in the age group of 6-9 are affected by ASD. There is an increase in number of children with Autism Spectrum Disorder every year. Children with ASD will struggle to communicate, dealing with changes (new food, substitute of teacher) and making friends. They also have trouble in Focus, Attention, and Memory, Time management, Emotional control and Frustration. The lack in emotional control makes them prone to emotional outbursts and meltdowns which are difficult to handle by parents and teachers. It will be beneficial to develop a system that can help us find the internal state of children. Researchers in Human Computer Interaction (HCI) and Smart IOT have identified the hidden emotional state of people using physiological signals. Similar algorithms can be developed for children with ASD to identify their internal state. In this work, we focus on identifying the positive and negative emotional states of children using electrocardiogram (ECG) signals. Such system will identify the internal state and notify the parents and caretakers will help in doing the remedial measure or alternative therapies to avoid extreme and aggressive behaviors.

Paper ID - NCHS202003150: **Design of Parallel Prefix Adder for High Speed and Low Slice Utilization in FPGA**

Raj. O[1], Adithyan. S[2], Pravin. A[3], Saravana Kumar. D[4], Dr. R. Uma[5]
Department of ECE,
[1, 2, 3]UG Scholar, [4]Professor
[1, 2, 3, 4]Jeppiaar Institute of Technology

ABSTRACT

This mini project comprises the different types of adders comparing with parallel prefix adder and its characteristics. Adder is used to do an arithmetic operation, like addition, multiplication, accumulation etc., Likewise, there is N number of adders are available with specific characteristics. Based on these adders are divided into three categories comparing to other adder, Parallel Prefix Adder (PPA) gives a best performance in slicing, area consumption and delay. In PPA adders, combining of Han Carlson and Ladner Fischer adder combined together and designed a new hybrid proposal. This can shows a best result in simulation by occurs moderate power consumption and less delay of designing high speed applications, In upcoming sessions we are going to discuss about the different types of adder and my new proposal along with simulation results of hybrid design of parallel prefix adder.

Keywords: *Adder – Parallel Prefix Adder (PPA) – Han Carlson adder - Ladner Fischer adder - Hybrid proposed adder – Area – Delay – Simulation Result*

Paper ID - NCHS202003151: **Evolution of Large Capacity Fiber to the Home Technology (FTTH) in Competition with Other Wireless Technologies**

R.Gowri[1], A. D. Sathya[2], R. Divya[3]
[1, 2, 3]Department of ECE
[1, 2, 3]UG Scholar
[1, 2, 3]Jeppiaar Institute of Technology

ABSTRACT

As the broadband revolution continues, the ever increasing competition in the broadband service market is forcing broadband service suppliers to plan their strategies for delivery of "triple play" services, with voice, data and video provided by a single connection. To review the latest developments in the leading broadband access technologies and we assess the ability of those technologies to meet the future requirements of the broadband consumer. We compare and contrast those technologies to the advantages of fiber to the home to determine whether fiber continues to offer the ultimate in broadband connectivity.

Paper ID - NCHS202003152: **Smart Home Automation and Security System Using Arduino**

B. Hemalatha, Sowmiya Manoj. M, Ganesh. Tummi
Department of ECE
Bharath Institute of Higher Education and Research
hema.contact@gmail.com, sowmy_anu@yahoo.com, ganeshtummi9669@gmail.com

ABSTRACT

With the advancement of technology and more dependency of people on smart phone and increasing demands of easy and quick way of solving Daily life task, it has become very important to have a technology which can control over the domestic and industrial applications using IOT. Our paper 'Sensing and controlling the world around using Arduino and IOT 'deals with embedded technologies along with internet of things (IOT) using Arduino which employs the embedded block and script programming for Arduino and sensors like flex sensor, accelerometer, flame sensor, magnetic sensor, WI-FI module. In this paper we present a home automation and home security technique. The sensors will be interface with Arduino. The status of our home appliances will get uploaded to a cloud platform through wireless module. Our system and mobile should be connected over same wireless network. Our sensors will be able to enable or disable the sensors which will be in control of the user. The flex sensor will depend upon the gestures of our fingers to control the appliances. The magnetic sensor will enhance door breaking security. All these data can be seen by user on the cloud platform like THINKSPEAK. This paper will serve as an example of how IOT applications can make our life easier.

Key Words: *Arduino, Flex Sensor, Wireless Module, Flame Sensor, Internet of things (IOT) , ThinkSpeak.*

Paper ID - NCHS202003153: **Arduino Based Vibration Detector and Alarm System**

S.Mary Cynthia,
Assistant Professor, Dept of ECE, Jeppiaar Institute of technology, Sriperumbudhur,
Paper presented by: G.Kalaiselvi, A.Karunya, R.Divya (UG students)

ABSTRACT

In the present global situation, the combination of diverse sensors to create a clever sensor is at the rise. This paper offers with the accelerometer as a vibration detector. The fundamental awareness of this venture is to lessen the complexity of the present structures and for that reason reducing the price. The accelerometer is able to stumble on the exchange in momentum generated within the three axial planes and this belongings offers the similarly advantage in detecting the vibrations produced inside the certain subject of hobby. If the adxl335 accelerometer detects an undesired vibration in the surroundings, it will sound the alarm and make LED to blink. And hence this accelerometer can also be used as an alarm system

---

Paper ID - NCHS202003154: **People Evacuation Guidance Model for Fire Hazard**

Dr. Faritha Banu J[1], Yuvarani K[2], Suvetha B[3], Nyle S[4], Srilekha A[5]
[1]Professor, [2, 3, 4]UG Scholar,
[1, 2, 3, 4]Department of ECE, Jeppiaar Institute of technology, Sriperumbudhur,
banujahir@gmail.com[1], yuvaraniyuva99@gmail.com[2], suvebala99@gmail.com[3],
Email:nylejenifer@gmail.com[4], writersrilekha@gmail.com[5]

ABSTRACT

With the development of science and technology, the design of modern architecture is becoming more and more attractive. The large-scale public buildings such as shopping malls, office buildings, Research centres and education centres are increasing dramatically. In case of sudden disasters and the overloaded electricity may easily cause fire and the fire smoke, fire in large buildings spread over a wide range of areas and produces physical damages, several hazard to life and property and atmospheric pollution. This paper proposes An Intelligent IOT based People Evacuation Guidance Model for Fire Hazard to guide the people by constructing the evacuation path dynamically based on the real time situation to reach the safety exit quickly in large public buildings using their Personal Digital Assistant like mobile phone, tabs etc. Whenever a fire breaks out, IOT module alerts the people to find the safety exit. Thus, the proposed system minimizes danger and economic losses by guiding the

optimized evacuation path. The performance of the proposed system will be compared with the existing system and the result of improvement will be shown.

Keywords: *Fire Detection, Internet of Things, Optimal Path, Safety Exit, Mobile Terminal.*

Paper ID - NCHS202003156: **Integrated Multi-Purpose Field Surveillance Robot For Military Use**

DR. G.R Jothilaksmi[1], S. Vishal[2], G. Vijayaraj[2]
[1]Associate Professor, [2]UG Scholar,
Vels Institute of Science, Technology and Advanced studies, (VISTAS), Chennai

ABSTRACT

Surveillance robots are remotely controlled robots, equipped with a camera, transmitting video data to the intervention troop. They are made to small and compact enough to simply transport. In this paper, the project supposes a movable spy robot with a remote controller by using Raspberry pi and Smart Phone. The spy robot is made up of a wireless camera, Metal detector, Motion detector, Sample collector, batteries and four movable wheels. CCD camera is employed to capture information surrounding the robot. A live video it can be transmitted to the smart phone to view user command. To use the Spy robot in the dark area as night, the CCD is set up with night vision camera that connected to raspberry pi. Wireless remote system for transmitting and receiving wireless logic signals to regulate the motors of the Spy robot system. The Four Brush DC motors and the two L293D are involved in Remote Operated Surveillance Robot. Motion detector is used to detect motion of human by 360 deg. Metal detector is used to detect the mine in a field and it gives the alert to a troop. Sample collector is mainly used to collect sample from the ground. L293D are used to drive the Brush DC motors respectively. In this paper, Remote Operated Spy Robot may be a small robot designed for spying, surveillances and inspection purposes.

Index Terms-*Raspberry pi, CCD camera, L293D, spy robot.*

Paper ID - NCHS202003157: **Application of Cognitive Radio and Interference Cancellation in the L-Band Based on Future Air-To-Ground Communication Systems**

Dr.M.Meena[1], P.Negha.A[2], A. Hillary Merlin[2]
[1]Assistant Professor, [2]UG Scholar
Department of ECE, Vels Institute of Science, Technology and Advanced studies, (VISTAS), Chennai
meena.se@velsuniv.ac.in, neghashree14@gmail.com, hillarymerlin99@gmail.com

ABSTRACT

The Very High Frequency band (VHF) currently used for aeronautical communications is becoming congested, and future Air-to-Ground (A/G) communication will require much greater use of data

communications. For meeting future capacity requirements in aeronautical communications, we propose two new approaches one of which is a cognitive radio based A/G communication network that provides dynamic spectrum access to airplanes to overcome the spectrum scarcity problem in the VHF band.

Another approach involves use of a new spectrum in the Ultra-High Frequency band (UHF) to create a new A/G link. In this paper, we propose and investigate the possibilities for developing a spectrum sensing approach to detect idle band in the VHF spectrum and analyze the possible interference between future L-band Digital Aeronautical Communication System (L-DACS) and legacy aeronautical systems.

Paper ID - NCHS202003158: **Solar Vehicle for Green Environment**

[1]Gunasekaran. J, [2]Vijay.J, [3]Mahalakshmi. K, [4]Aishwarya.A
[1, 3, 4]Student, [2]Assistant Professor
[1, 2, 3, 4]Department of ECE
[2]Aarupadai veedu Institute of Technology

ABSTRACT

To overcome fossil fuels insufficient availability and make vehicles eco-friendly, Solar Power is utilized to run the Auto mobiles. By considering this, we have designed an ELECTRICAL VEHICLE which runs on SOLAR POWER. The vehicle is a three-wheeled drive that can be used as short distances shuttle. Since the Solar Based Vehicles will be the future of the automotive industry, it is necessary to design an Efficient & Economical Electric Vehicles.. This vehicle is an initiative in this direction.

Index Terms— *Eco friendly, Electric Vehicle, Solar Power*

Paper ID - NCHS202003159: **The PCA and MLRI Schemes for Improving the Digital Image Quality**

[1]Dr.N.Satheesh Kumar, [2]Dr.M.Venkatesan,
[1, 2]Professor, Department of ECE,
PBR Visvodaya Institute of Technology and Science, Kavali, A.P

ABSTRACT

Digital cameras have become popular, and many people are choosing to take their pictures with digital cameras instead of film cameras. When a digital image is recorded, the camera needs to perform a significant amount of processing to provide the user with a viewable image. An important part of this image processing chain is color filter array (CFA) interpolation or demosaicking. The most popular and widely used CFA is the Bayer CFA. The CFA raw data denoising is challenging. If the reduction of the noise in the noisy CFA raw data is done then the high-performance demosaicking

algorithm is applied. For de-noising, the Principal component analysis (PCA) algorithm is used. For demosaicking, residual interpolation (RI) is proposed. Experimental results demonstrate that our proposed demosaicking algorithm using the RI surpasses the state-of-the-art algorithms for the Kodak, the IMAX, and the beyond Kodak data sets.

Keywords: *Bayer color filter array, demosaicking, de-noising, residual interpolation, Principal component analysis.*

Paper ID - NCHS202003160: **Computer Aided Skin Disease Detection and Classification**

Guna Shankar Rimmalapudi[1], R.Indumathi[2], R.Vinodhini[3]
[1]UG Scholar, [2, 3]Assistant Professor
Bharath Institute of Higher Education and Research, Chennai
guna099213@gmail.com, indhu.maheshradha@gmail.com , vinodhiniravi44@gmail.com

ABSTRACT

Infections of Skin are becoming most common disease in this fast paced world. Due to increased number of Skin disease related cases there is need for automatic detection of skin disease is important in Diagnostic & Therapeutic Application's, although there is a large amount of skin diseases images data and due to lack of quality in images it is very hard to classify the disease, with good accuracy. The paper elucidate about the process of automatic detection of skin infections, which mainly focused on classification of given image data into normal, cancerous & allergic. The input image is preprocessed then passed through a fully trained BPN network. Respectively it is compared with database using K-means for disease classification.

Keywords: *Tissue, BPN, K-means clustering.*

Paper ID - NCHS202003161: **Internet of Things: Challenges, Architectures, Protocols, Applications and Opportunities**

Dr.K.Sasikala
Associate Professor, Department of Computer Science and Engineering,
Vinayaka Mission's Kirupananda Variyar Engineering College,
Vinayaka Mission's Research Foundation (Deemed To Be University), Salem-636308

ABSTRACT

Internet of Things is the combination of different technologies which contains the substantial things and is used to converse, interact and also intellect with the interior circumstances or the external surroundings. Rather than one to one people communication, Internet of Things focuses on machine to machine communication. The status of IoT growth In India, and also contains security issues

challenges discussed in this paper. It also reviews about the challenges, architectures, applications and opportunities.

The rapid development of technology currently revolves significantly around Internet of Things (IoT) and expected to play a crucial role in coming days. IoT has become the main target of attention for several researchers to get issues and challenges that associated with its design and architecture. One of the various significant issues is that the multitude of languages, protocols and standards, also because the lack of agreement on which it works best for individual layers of the IoT. It doesn't have one platform of standardization; it's changed thanks to the heterogeneity of connected things.

Paper ID - NCHS202003201: **Driver Drowsiness Detection in Real Time Scenario Using a Logistic-Regression-Based Machine Learning Algorithm**

Sai Krishna. J[1], Mohameed Thazeem[1], Jeramiah Asir[1], Vijay. J[2]
[1]U.G Student, [2]Assistant Professor (Gr-II)
[1, 2]Department of ECE, Aarupadai Veedu Institute of Technology,
Vinayaka Mission's Research Foundation
vijay.ece@avit.ac.in

ABSTRACT

The number of car accidents due to driver drowsiness is very steep. An automated non-contact system that can detect driver's drowsiness early could be lifesaving. Motivated by this dire need, we propose a novel method that can detect driver's drowsiness at an early stage by computing heart rate variation using advanced logistic regression based machine learning algorithm. Our developed technique has been tested with human subjects and it can detect drowsiness in a minimum amount of time, with accuracy above 90%.

Key Words—*Driver drowsiness detection, electrocardiogram, heart rate variation, machine learning.*

Paper ID - NCHS202003202: **Ibeacons for Localization and Tracking of People in Women Safety**

Muralimanohar V[1], Dinesh kumar J P[1], Vignesh[1], Vijay J[2]
[1]U.G Student, [2]Assistant Professor (Gr-II)
[1, 2]Department of ECE, Aarupadai Veedu Institute of Technology,
Vinayaka Mission's Research Foundation
vijay.ece@avit.ac.in

ABSTRACT

In this work, architecture for real-time tracking using Bluetooth Low Energy (BLE) and iBeacons in women safety is proposed. The proposed system is to locate not only women but also other facilities such as children. It consists of four different frameworks: server communication, user interaction,

cross-platform communication and outdoor localization. A wearable BLE Enabled device is setup with coms battery and a smart phone can be used in our system. The first stage of the tracking system is setting up and calibrating the BLE iBeacons for initialization. Then the Received Signal Strength is collected from the BLE Enabled devices carried by users. These data are analysed and calculated using our improved Least Square Estimation approach to estimate the actual RSSI of users. Once it's properly estimated the RSSI value by pairing with the developed android apk, the GPS location of the mobile is sharing to the server.by having the proper RSSI and GPS location in server,

the results show that our tracking system achieves resolutions of the order of exact location of the device and ibeacon distance paired with the apk. This will be further integrated with Google map to improve the real-time tracking monitoring experiences.

Paper ID - NCHS202003203: **An Automated Method for Counting of Blood Cells Using Image Processing**

T.C.Ajith Kirthic[1], Y.Renith[1], A.V.Deepak Kumar[1], L.K.Hema[2]
[1]U.G Student, [2]Professor & Head
[1, 2]Department of ECE, Aarupadai Veedu Institute of Technology,
Vinayaka Mission's Research Foundation
hemalk@avit.ac.in

ABSTRACT

The project proposes an automated method for counting of blood cells using image processing techniques. The traditional methods of blood analysis involve the manual counting of blood cells observed under the microscope. This method poses large dependency on the skills of the laboratory technician and can cause errors. The automated hematology analyzers, on the other hand, produce accurate results. However, this equipment is very costly and difficult to move once installed. They require trained experts to operate this equipment. The proposes method provides a low cost and portable solution for obtaining the blood cell count using an image processing algorithm that works on the images captured by a microscope with considerable accuracy. The method minimizes the cost of the equipment while promoting mobility of the device for relocation to remote parts for pathological tests

---

Paper ID - NCHS202003204: **A Smart Band for Women Safety Using Raspberry Pi**

Kankanala Sitaram[1], Pavan Chowdary[1], Akhil Reddy[1], D. Vijendra Babu[2]
[1]U.G Student, [2]Professor & Vice Principal
[1, 2]Department of ECE, Aarupadai Veedu Institute of Technology,
Vinayaka Mission's Research Foundation
vijendrababu@avit.ac.in

ABSTRACT

As we see in now day's safety for women is very less in our society. They are not able to go out without proper security. This security issues makes parents insecure so that parents are afraid of send their daughters out. As the surveys conducted by government of India 83 percent of crimes are increased against women between 2011 to 2020.As we can't change the society but we can make a try to increase the security of women using technology. We know that there are many smartphone applications based on women panic situation but it is not possible to the victim to reach the cellphone all the time. In this approach, the focuses on a security system that is designed merely to serve the purpose of providing security to women so that they never feel helpless while facing such social challenges. An advanced system can be built that can capture the video of the event as well assend the emergency messages of the victim through GSM to respective mobile numbers. The idea to develop a smart system for women is completely comfortable and also easy to use as compared to existing women security solutions such as infamous mobile apps, bulky belts and a separate garment that are just very abstract and obsolete.

Key Words: *Pulse Sensor, GPS, GSM, Panic button, Raspberry Pi, Camera.*

Paper ID - NCHS202003205: **Automatic Speed Control of Vehicle Using RF and GSM**

P.Jayadeep reddy[1], N.Shanmuka Ganesh Reddy[1], Dheeraj Kumar Reddy[1], Vijay J[2]
[1]U.G Student, [2]Assistant Professor (Gr-II)
[1, 2]Department of ECE, Aarupadai Veedu Institute of Technology,
Vinayaka Mission's Research Foundation
vijay.ece@avit.ac.in

ABSTRACT

This project has an aim to control the speed of any vehicles automatically in cities and also in restricted areas such schools, parks, hospitals and in speed limited areas etc. Nowadays in a fast moving world all the peoples are not have self-control. Such peoples are driving vehicles in a high speed. so the police are not able to monitor all those things. This paper provides a way for how to control the speed without harming others. Driver does not control anything during such places; controls are taken automatically by the use of electronic system. In this project we using RF for

indicating the speed limit areas it is placed front and back of the restricted zones. RF receiver is placed inside the vehicle. Speed is acquired by the help of speedometer in the vehicle. The controller compares the speed. if it exceeds the limited speed the controller alerts the driver and controls taken automatically. If they does not respond that message an information along with the vehicle number is transmitted to the nearest police station by the use of GSM and penalty amount is collected in the nearest toll gate.

Keywords—*RF transmitter and receiver, Controller unit, GSM module*

Paper ID - NCHS202003206: **Handheld Tourist Guidance System Using GPS**

D.N.Sunil[1], S.Thirunavukarasu[1], L.K.Hema[2]
[1]U.G Student, [2]Professor & Head
[1, 2]Department of ECE, Aarupadai Veedu Institute of Technology,
Vinayaka Mission's Research Foundation
hemalk@avit.ac.in

ABSTRACT

The main idea of this system was to design a system that will be helpful when visiting some new places and cities. This system utilizes the GPS module to get the current location and suggest the list of tourist places near that location. And it displays the picture and how far those places from the current location in km. It incorporates a tiny GPS module Neo-6m, 3.5 inch TFT display and Raspberry pi controller board. Audio system involved to provide the voice over about the location via the speaker.

Keywords—*Raspberry pi controller, Neo6m GPS, TFT display, speaker.*

Paper ID - NCHS202003207: **Vehicle to Vehicle Based Speed Manipulation System for Collision Avoidance Using Can Protocol**

Vijay.J[1], Sajan Kumar[2], Gaurav Kumar[2], Md. Ashfaque[2],
[1]U.G Student, [2]Assistant Professor (Gr-II)
[1, 2]Department of ECE, Aarupadai Veedu Institute of Technology,
Vinayaka Mission's Research Foundation
vijay.ece@avit.ac.in

ABSTRACT

The motive of our project is to mitigate the number of road accidents by warning the driver of the vehicle way head in case of possible collision due to speedy driving, providing the vehicle with the speed data of the adjacent vehicle so that an intelligent speed control mechanism could be adopted in controlling the vehicle's speed, irrespective of the driver's response. Speed of the adjacent vehicle is captured via wireless transceiver and logged into a dedicated Electronic control unit (ECU). The

concerned vehicle's speed is sensed and captured. A comparison is made between both the data units, where communication is established via CAN protocol. CAN protocol involve communication between various controllers without the involvement of a host computer which finds a wide application in automotive industry . The speed from both the vehicle is compared and in case of high speed of the adjacent vehicle, the speed of the concerned vehicle is reduced relatively. Thus, the proneness of accidents is greatly avoided which in turn pulls down the accident rate thereby saving more lives.

Keywords—Vehicles; Wireless Transceiver; CAN; Controllers..

Paper ID - NCHS202003208: **A Three-Port DC-DC Converter Based Distributed DC Grid Connected PV System with Island System Output Voltage Allocation Control by using P & O Method**

Mrs.K.S.Kavitha Kumari[1], Ihsan Mubarack Ali.A[2], Muhammed haris.K[3], Abdul latheef[4]
[1]Assistant Professor (Gr-II), [2, 3, 4]U.G Student,
[1, 2]Department of EEE, Aarupadai Veedu Institute of Technology,
Vinayaka Mission's Research Foundation
kavitha.eee@avit.ac.in, latheefthayyil007@gmail.com, iihsanalik@gmail.com,kallanharis7169@gmail.com

ABSTRACT

A circulated dc network associated photovoltaic (PV) age design dependent on half breed associated three-port dc –dc converters (TPCs) and its control procedure are proposed in this paper. The proposed framework comprises of numerous modular PWM plus phase-shift (PPS) controlled TPCs, which includes soft-switching and low voltage stress. The input-port of each TPC is connected to an independent PV energy source to accomplish individual MPPT, and the output-ports of these TPCs are associated in series arrangement to interface with a high-voltage (HV) dc bus, while the bidirectional-ports are in parallel to build a low-voltage (LV) dc bus. The mismatch power of input sources can be transferred through the LV dc bus among these TPCs, and the power and voltage balancing at the high-voltage output side can be realized.To reduce the mismatch power at the input and output side perturb and observe techniques is used. By directing the voltage reference of a bidirectional port in a linear relationship with the yield voltage, yield voltage sharing is acknowledged with just the module's own voltage and current being detected. Simulation and experimental results are given to confirm the viability and points of interest of the proposed design and control procedure.

Keywords: *Three port DC-DC converter*

Paper ID - NCHS202003209: **Design and Development of Circuit for Gas Leakage Detection**

Rajat Kumar Dwibedi[1], Sagar R D[2], Patnam Phani Sai[2], Ganjikunta Yeshwanth[2]
[1]Assistant Professor (Gr-II), [2]U.G Student,
[1, 2]Department of ECE, Aarupadai Veedu Institute of Technology,
Vinayaka Mission's Research Foundation
rajatkumar.ece@avit.ac.in, Sunithachillu@gmail.com, phanisai03@gmail.com, yashwanthyash96@gmail.com

ABSTRACT

A gas detector is a device that detects the presence of gases in an area, often as part of a safety system. This type of equipment is used to detect a gas leak or other emissions and can interface with a control system so a process can be automatically shut down. A gas detector can sound an alarm to operators in the area where the leak is occurring, giving them the opportunity to leave. This type of device is important because there are many gases that can be harmful to organic life, such as humans or animals.

The main propose is to design and develop gas leakage detection and sending a SMS alert system. Gas detectors can be used to detect combustible, flammable and toxic gases, and oxygen depletion. This type of device is used widely in industry.

More recently, infrared imaging sensors have come into use. All of these sensors are used for a wide range of applications and can be found in industrial plants, and refineries

---

Paper ID - NCHS202003210: **IOT Based Solution for Monitoring Of Pollution through Pesticide in Fresh Fruits and Vegetables Available In Markets**

Mohammed Yasim Abdullakutty N. A[1], Sanjay Rajan[1], Nayomi Purushothaman[1], Vanitha. V[2]
[1]U.G Student, [2]Assistant Professor (Gr-II)
[1, 2]Department of ECE, Aarupadai Veedu Institute of Technology,
Vinayaka Mission's Research Foundation
nayominayuz@gmail.com, vanitha.ece@avit.ac.in

ABSTRACT

Many wireless technologies have been used for sensing, tracking, etc. in environment management. Fruits and vegetables used in commercial agriculture have led to an increase in farm productivity. Despite the wide ranging benefits of using fruits in agriculture, several incorrect applications can result in high and undesirable levels of the compounds in the produce that reaches consumers. With the help of Arduino and colour sensor is used for sensing the condition of fruits or vegetables can also be determined. Using colour sensor we are proposing a system. With addition of that, the LCD is used

for indicating the pests present in fruits and vegetables. The problem shows through LCD and make aware that How much Percentage is present in fruits and vegetables.

Keywords: *Sensing, tracking, sensor.*

Paper ID - NCHS202003211: **Smart Reconnaissance and Apprise System Enhanced With Raspberry Pi and IEEE 802.11 Module**

Ajith.P[1], Hariharan .P. V[1], Rufus Gnanaraj. R[1], R Mohana Priya[2]
[1]U.G Student, [2]Assistant Professor (Gr-II)
[1, 2]Department of ECE, Aarupadai Veedu Institute of Technology,
Vinayaka Mission's Research Foundation
harihara631@gmail.com, mohanapriya@avit.ac.in

ABSTRACT

Surveillance is the process of monitoring a situation, an area or a person. This generally occurs in a military scenario where surveillance of borderlines and enemy territory is essential to a country's safety. The security and remote surveillance system is increasingly prominent feature on the mobile phone. As the internet of things is the concept, newly introduced in the field of electronics. The concept is about handling the things with the use of internet and the best model for these applications is raspberry pi. Automation and security is getting the highest priority all over the world. Automation and security at various places like home, office etc can be achieved by using different types of surveillance systems. This project presents the monitoring and controlling of surveillance system enhanced with WI-FI (IEEE 802.11) technology. This system consists of webcam and Raspberry PI (BCM2837). In this system, webcam is used to detect the motions and fire will be detected from webcam images. In case of any human movement occurs, the webcam will capture live data in the surroundings and transmitting the live video to social network through WI-FI (IEEE 802.11). Simultaneously, the buzzer alerts the nearby neighbours . The system also consists of sprayer, sprays the chloroform liquid on the intruders.

Keywords- *Surveillance, Raspberry pi, webcam, buzzer alerts, chloroform liquid*

Paper ID - NCHS202003212: **Development of Microcontroller Based Landslide Early Warning System**

Varun J P[1],Roshin Chandra[1],Anjas M P[1], R Mohana Priya[2]
[1]U.G Student, [2]Assistant Professor (Gr-II)
[1, 2]Department of ECE, Aarupadai Veedu Institute of Technology,
Vinayaka Mission's Research Foundation
varunjpmch@gmail.com, mohanapriya@avit.ac.in

ABSTRACT

As reported by the National Disaster Risk Reduction Coordinating Council of the Philippines, from the year 2010-2015, landslide is the third most recurring geohazard, next to floods and earthquake. Casualties caused by landslide constitute 1.55% of the total casualties during the same time span. Due to fact that a landslide early warning system is not considered, and the practice of only secluding the public from defined landslide prone areas, the safety of the general public is always at risk. The objective of this paper is to develop a landslide early warning system that utilize rain gauge and an intelligent accelerometer/inclinometer for interception of possible occurrence of landslide. With the help of PHIVOLCS and PAGASA calibration for the standard level of measurement were established: (l) rainfall amount (2) angular displacement and (3) ground movement. With the factors observed it is expected to deliver an effective landslide early warning system that can intercept an impending landslide whether it is earthquake-induced or rain-induced.

Keywords: landslide, component, formatting, style, styling, insert

---

Paper ID - NCHS202003213: **Remote Controlled Solar Grass Cutter Robot**

Aswin John[1], Harikrishnan[1], R Mohana Priya[2]
[1]U.G Student, [2]Assistant Professor (Gr-II)
[1, 2]Department of ECE, Aarupadai Veedu Institute of Technology,
Vinayaka Mission's Research Foundation
aswin007john@gmail.com, mohanapriya@avit.ac.in

ABSTRACT

A good lawn around your home not only enhances your quality of life, but also improves the value of your home and helps the environment by filtering the air and water that passes through it. But also these benefits do have some disadvantages however. Grass requirements are cut regularly. Healthy lawns need proper maintenance system, which are created by regular cutting at proper frequency and height. Un-cut grass is an invitation for diseases and other sickness that carry bugs, beetles, dragon flies etc. Cutting down involves physical effort and time, not to mention the maintenance and cost of a lawn mower. So In this proposal I am going to design a smart brush cutter which does the work automatically by detecting the obstacle in its path as well as saving time and physical effort for the fellow humans.

Keywords: *Smart Brush Cutter, Automatic Brush Cutter.*

Paper ID - NCHS202003214: **IOT Webserver to Analyse Quality of Air, Temperature, Humidity and Climatic Condition in Our Environment**

G. Harishankari[1], G. Pavithra[1], T. Suvalakshmi[1], R Mohana Priya[2]
[1]U.G Student, [2]Assistant Professor (Gr-II)
[1, 2]Department of ECE, Aarupadai Veedu Institute of Technology,
Vinayaka Mission's Research Foundation
pavithragopi99@gmail.com, mohanapriya@avit.ac.in

ABSTRACT

This paper is about Intelligent Traffic Control and Management System which uses intelligent components like RFID, IR sensors, microcontroller, etc. It also consists of modules for i) Allowing passage of prioritized vehicles viz Ambulance, VIP, etc. ii) Enabling users to track their stolen or lost vehicles. iii) Help people to get information about the traffic density in specific area .iv) Avoiding corruption by automated fine deduction. RFID tags are used for unique identification of vehicles and IR sensors are used to get the vehicle count. RFID readers used are having frequency 125 KHz. PCB (Printed circuit Board) are used to mount circuit components.

Keywords: *Quality of Air, Rain Detection, IOT, Arduino uno.*

Paper ID - NCHS202003215: **Human Interactive Wireless Notice Board**

Syed Mohammed Al Aman[1], Arjun Santhosh[1], Jerin J Jacob[1], R Karthikeyan[2]
[1]U.G Student, [2]Assistant Professor (Gr-II)
[1, 2]Department of ECE, Aarupadai Veedu Institute of Technology,
Vinayaka Mission's Research Foundation
rrmdkarthikeyan@avit.ac.in

ABSTRACT

The main objective is to develop such notice board system, which can be operated by the voice command given from the user end. The main concept behind Voice operated Electronic notice board using a rolling display is to show scrolling messages and to control them by using our own voice. The user has to give voice command in his/her own voice to control the scrolling messages displayed on the electronic notice board. Voice recognition is done in the Android application. The user has to install this Android application on his/her smartphone or tablet. Then the user has to give voice commands to this android app. The android app then passes these commands to the microcontroller using wireless communication. The microcontroller receives these commands with the help of Bluetooth receiver and decoder. Then it passes these commands to the Rolling display which is made up of Matrix LEDs. Based on the commands given the notice board reply the answer.

National E-Conference on Hardware Security-NCHS'20

25th & 26th June 2020

Department of Electronics And Communication Engineering
Aarupadai Veedu Institute of Technology
A Constituent College of Vinayaka Mission's Research Foundation
(Deemed to be University Under Sec 3 of the UGC Act 1956)
Vinayaka Nagar, Old Mahabalipuram Road, Paiyanoor,
Kancheepuram District, Chennai- 603 104,
Tamil Nadu, India.

SOUVENIR - NCHS'20

/ AVITChennai / avit_chennai AVIT / AVITChennai / AVIT Chennai www.avit.ac.in