

International Conference on ADVANCES IN COMMUNICATIONS, COMPUTING AND EMBEDDED SYSTEMS

September 18 – 19, 2020 ISBN 13: 978-81-930222-9-0



Dr. B. Anil Kumar Program Chair

1 st

Dr. N Swetha CONVENOR **Dr. Hima Bindu V** Organising Chair

GOKARAJU RANGARAJU

Institute of Engineering and Technology





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"The path to diversity begins with supporting, mentoring, and sponsoring diverse scholars and researchers to become creative and fruitful"









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The Department of Electronics & Communication Engineering started right from the inception of the college in the year 1997.

The primary objective of the department has been to impart quality education, training and research at the undergraduate and postgraduate in various areas of Electronics and Communication Engineering with broad emphasis on design aspects of electronic systems.

The Department presently offers UG Programme B. Tech with an intake of 300 and one PG programme, VLSI with an intake of 18.

The Department has been accredited by NBA in 2006, 2009, 2014 and 2017 for excellence in engineering education.



Dr Gokaraju Ganga Raju Chairman Gokaraju Rangaraju Educational Society (GRES)



MESSAGE

I am pleased to know that the Department of ECE of GRIET is organizing "1st International Conference on Advances in Communications, Computing and Embedded Systems (ACCES 2020)", during 18-19 September 2020 Industry 40, the Government of India initiative needs young researchers to embrace the Smart manufacturing technology, analytics and IoT The academic institutions like GRIET play a vital role in training the young Engineers to adapt to the rapidly evolving work environment and ensure students have the theoretical and practical knowledge to meet the demands of a demanding workforce This conference is very pertinent

My best wishes and appreciation for the organizing team

uglely Dr Gokaraju Ganga Raju





Sri GVK Ranga Raju, Vice President Gokaraju Rangaraju Educational Society (GRES)



MESSAGE

The Department of ECE of GRIET is providing an excellent platform for industrial experts and research scholars to bring innovations to meet the rapid growth of the Information and society needs I am confident that the eminent professionals participating in the Conference will have a great opportunity to deliberate on various issues under different tracks and will come out with significant recommendations

I complement the organisers of the Conference for their unwavering effort and wish the Conference all success

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Sri GVK Ranga Raju





Sri M G Sekharam Chief Executive Officer Gokaraju Rangaraju Educational Society (GRES)



MESSAGE

It gives me great pleasure in welcoming all the participants of ACCES 2020 to GRIET. The goal of this prestigious conference is to bring together, a multi-disciplinary team of scientists and engineers from all over the world for presenting and exchanging break-through ideas The conference also aims to globalize state of art research in the field of Electronics and Communications. The conference enables the discussions and presentations internationally competitive and exposes the participants to frontier areas of research in this field.

I wish the organisers and all the participants all the success in conducting the conference.

Meelus

M G Sekharam



Dr K V S Raju Sr Administrative Officer Gokaraju Rangaraju Institute of Engineering and Technology



MESSAGE

Greetings from GRIET!

I convey my best wishes to all the delegates, participants and organizers of the conference

Dr K V S Raju





Dr Jandhyala N Murthy Director Gokaraju Rangaraju Institute of Engineering and Technology



MESSAGE

Dear friends,

It is my pleasure to invite all enthusiastic academicians and young researchers from all over the world to attend the "1st International Conference on Advances in Communications, Computing and Embedded Systems (ACCES 2020)", during 18-19 September 2020 This conference endeavours to bring more insight into current practices and cutting-edge technologies like Block Chain, Cyber Security, Machine Learning and 5G, which should whet the appetite of young researchers and talented student communities

Complements and best wishes the core team and participants

Dr Jandhyala N Murthy





Dr J Praveen Principal Gokaraju Rangaraju Institute of Engineering and Technology



MESSAGE

The Department of Electronics and Communication Engineering of GRIET is organizing a prestigious event "1st International Conference on Advances in Communications, Computing and Embedded Systems (ACCES 2020)", during 18-19 September 2020 GRIET has time and again proved its mettle in the disbursal of the state-of-art knowledge while keeping a firm footing in the classic and conventional foundation of knowledge for enabling development of correct aptitude, attitude and skills of its students The department has a rich tradition in research and development predominantly in the areas of VLSI, Embedded Systems, Internet of Things, Signal and Image processing This ACCES 2020 has provided a unique platform for delegates and participants from Electronics, Electrical and Computer science Engineering The conference has promoted discussions and interaction among academics, researchers and professionals on various aspects of ubiquitous technology in the field of Communication, Signal and Image processing, VLSI, Soft Computing and Embedded Systems

I convey my best wishes to all the delegates, participants and the organizers for a successful International conference

T. Kan

Dr J Praveen





Dr. Swadesh Kumar Singh Dean R&D Gokaraju Rangaraju Institute of Engineering and Technology



MESSAGE

Dear Researcher's,

The Department of ECE is presenting an excellent opportunity to all the academicians, researchers and students to disseminate the state of art information on Electronics and Communication technologies. In today's world, it is very much necessary to involve multidisciplinary research collaborations to solve the societal and economical issues in the society.

I take this privilege to welcome all the participants and wish the Conference a grand success.

Dr. Swadesh Kumar Singh





Dr. Steve Ling School of Biomedical Engineering University of Technology Sydney, Australia



MESSAGE

It is my pleasure to get this invitation from organizing committee, ACCES-2020 to share some of my research outcome in the area of artificial intelligence in biomedical engineering

Nowadays, artificial intelligence methods play an importance role in the health technology research, which brings together complementary interdisciplinary research practice, in the development of innovative medical devices and biotechnological processes for health applications In general, feasible results may be obtained by applying traditional artificial intelligence methods to a health application

However, health technologies demand to be more robust, more precise and more efficient Applying traditional artificial intelligence methods may not achieve multiple goals idiot for a particular health application Recent research indicates that the advanced artificial intelligence methods can help to achieve a more satisfactory performance for a particular health application With the rapidly growing complexities of health design problems and more demanding quality of health applications, the development of advanced AI methods for health technologies is hence a critical issue

In this keynote, the basic concepts and some state-of-the art AI technologies and their biomedical applications are introduced Three biomedical applications using advanced AI technologies are discussed in this keynote presented The three applications are including 1) non-invasive hypoglycemia monitoring system for Type 1 diabetes, 2) brain computer interface-based wheelchair control and 3) medical imaging

Hope you all enjoy this keynote Thank You!

Steve Ling (Dr)





Samrat Lagnajeet Sabat Professor C A S E S T, School of Physics University of Hyderabad, 500046, India



MESSAGE

It gives me immense pleasure to be part of International Conference on Advances in Communications, Computing and Embedded Systems (ACCES 2020). This conference provides an opportunity to congregate International Researchers, Engineers, Scientists and specialists in various research and development fields of Engineering and Technology. The conference offers a premise for global experts to gather and interact intensively on the topics of Signal and Image processing, Embedded systems and Soft computing. I hope eminent speakers will cover the theme from different perspectives.

The success of this Conference is solely on the dedication and efforts of innumerable people who started working on the preparations for almost a year in many ways to make this Conference become a reality. Eventually I express my special thanks and appreciation to all.

Samt Sabel 28.03.18

Samrat Lagnajeet Sabat





Shuichi TORII Assistant Director, College of Cross-Culture and Multidisciplinary Studies Professor, Faculty of Engineering Kumamoto University, JAPAN



MESSAGE

Congratulations! I would like to congratulate the success of the 1st International Conference on Advances in Communications, Computing and Embedded Systems (ACCES 2020) which is organized by Gokaraju Rangaraju Institute of Engineering & Technology, Hyderabad This conference intends to provide a common platform for bringing together researchers from participating institutions for expanding academic collaboration As part of this conference, the researchers from abroad are invited and get exposed to its educational and research activities This time, the conference is modified due to Covid-19, that is the virtual presentations is arranged using Skype/Zoom The event focuses on the current research and development of the participating institutions on topics of mutual interest, with a special emphasis on "Science & Technology" based on "Engineering" The emerging technology and scientific advancements are discussed during the conference Presentations give new and innovative technologies in the relevant fields The topics include a wide spectrum of themes covering all major disciplines of science and engineering

The efforts put in by the faculty, the staff and the students in organizing this event are greatly appreciated I sincerely hope that participants will find the contents of this conference useful and productive I look forward to intense academic collaborations and research interactions and to achieve the common goal of technological advancement for global peace and prosperity

I wish the ACCES 2020 all the very best in future endeavours Once again, congratulations on the success of ACCES 2020

Shuichi TORII





Dr R Arthi Professor, Department of ECE, SRM Institute of Science and Technology Ramapuram Campus, Chennai,



MESSAGE

Dear Colleagues,

It is with great pleasure that I greet you on behalf of the "1st International Conference on Advances in Communications, Computing and Embedded Systems (ACCES 2020)" on September18 – 19, 2020

Following its tradition, this year the conference again offers a wide range of highly interactive sessions with Leaders of ubiquitous technology in the field of Communication, Signal and Image processing, VLSI, Soft Computing and Embedded Systems It is more delighting to host the conference in *Virtual Presentation using Skype/Zoom*

This conference is a wonderful opportunity to not only educate students and young researchers but deepen understanding of changing ideas and innovative methods of upcoming Technology I am convinced that for professionals this is an excellent event that will allow you to learn many new things as well as share your experience *Good Luck*!!!

Dr R Arthi



Dr P V Rao Research Supervisor TJIT-VTU, Bangalore



MESSAGE

This International conference ACCES2020 aims to become a prominent forum with State of Art edge technical contents that covers wide areas of interests to all attendees are looking to be educated at this conference wowed by content and overall event experience This conference is intended to nurture researchers and developers either from different areas to relevant works or interesting problems in the other areas by interacting in this forum Addressing new technical and business issues essential to advancing today's engineering and technological environments that meet the society needs in a day to day life Finally, no doubt all the participants will admire and cherish with a cutting-edge technical event by meeting, unrehearsed discussions and sharing your thoughts with keynote speakers, experts, research scholars and academia The topic areas with recent exponential growth in Artificial Intelligence and advancement of Deep Neural Networks, autonomous systems are gaining more and more attention in a wide range of practical applications of significant engineering importance to solve complex engineering problems

It is our great honour and pleasure to accept the responsibilities of this event as session chair I hope that the conference will be stimulating, informative, enjoyable and fulfilling experience to all participants who attend this event on two days at Hyderabad, India

ROUP OF INSTITUTION

Dr P V Rao





Dr Anil K Naik Assistant Professor,EED NIT Warangal



MESSAGE

It gives me pleasure to know that Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad, India is organizing 1st International conference on "Advances in Communications, Computing and Embedded Systems-2020" I strongly believe that this conference will provide tools and knowledge to overcome significant problems appearing in our industry and society by identifying innovative ideas and technologies introduced by the researchers and students

This conference will be a grand success and extend my best wishes for the success of this conference I congratulate the Institute on preceding this wonderful step

Dr Anil K Naik





Ms S Sudha Rani Scientist 'F' Defence Electronics Research Laboratory (DRDO) Hyderabad



MESSAGE

It is my great pleasure to be a part of the prestigious 1st International Conference on Advances in Communications, Computing and Embedded Systems-2020 on 18th & 19th September 2020 I congratulate Gokaraju Rangaraju Institute of Engineering & Technology, Hyderabad, which has taken up organizing this Conference to bring together some of the best minds in the industry and facilitating the participation of the younger generation of professionals and students Conferences such as these bridge the Academicians, Research scholars and the Industry personnel and provide a platform to interact/share their experience and knowledge I am happy to note that the Industry and Professional organizations are supporting this activity The effort gone towards organising and holding this conference during these trying times is worth mentioning and appreciating

I congratulate Gokaraju Rangaraju Institute of Engineering & Technology, Hyderabad, again, for taking up this initiative to conduct this Conference especially when our country is marching towards *Atmanirbhar Bharat* and the ambitious *MAKE IN INDIA* initiative which requires young professionals for meeting the goals and put India on par with any other country in the world I do hope that the conference will, to quote Bharat Ratna Dr APJ Abdul Kalam, "ignite the minds" and make the professionals realise that "small aim is a crime"

S Sudha Rani





Dr R Hafeez Basha, Ph D (Japan) President & CEO Basha Research Corporation Mobile: +91-9866587053 Email: ceo@brcorptech Website: wwwbrcorptech



MESSAGE

I am glad to know that Department of Electronics and Communication Engineering (ECE), Gokaraju Rangaraju Institute of Engineering and Technology (GRIET) an autonomous college approved by the University Grants Commission (UGC) and affiliated to Jawaharlal Nehru Technological University Hyderabad (JNTUH) is organizing the 1st International Conference on Advances in Communications, Computing and Embedded Systems (ACCES-2020) during 18-19 September 2020 which is supported by All India Council for Technical Education (AICTE), Ministry of Education, Government of India

Even in this COVID-19 world pandemic situation conference organizers have utilized the technology immensely at all levels in every activity right from the call-for-papers to successfully organizing It is also note worthy that some of the International Journals and Books which are SCI / SCOPUS Indexed and UGC-CARE approved have been tied up with ACCES-2020 to publish some of the good quality full length papers submitted by the serious researchers and academicians after the peer review which will enable them to enhance their Academic Performance Index (API) Score

BRCORP is associated with ACCES-2020 as Technical Sponsor sharing its resources in the form of mobilising Keynote Speakers from foreign Universities, promoting the conference among the network, review process in both abstracts and full length papers, assistance in collaborating with publishers, preparing conference proceedings, etc ACCES-2020 has received more than 375 papers out of which only the highest quality papers are shortlisted for oral presentations making the conference successful

I convey my appreciation and best wishes to both the organizers and participants

Dr R Hafeez Basha



PREFACE

It gives us immense pleasure to be a part of hosting team of 1st International Conference on Advances in Communications, Computing and Embedded Systems (ACCES 2020). The conference intends to bring together scientists, engineers and practitioners from different disciplines to discuss concerns related to various emerging techniques in science and technology. The rapid development in technologies and changes in lifestyle impose various issues in many countries. Our conference has been crafted to challenge the hurdles and we are fortunate to have leading speakers to share their experience and perspectives to achieve smart solutions through their innovation. We hope that the conference serves as a locus for interdisciplinary, a space for discourse and collaboration. ACCES 2020 is not just a conference but a great meetup for all the technocrats.

This conference received 376 papers from 143 organizations including foreign contributions. The number of accepted papers for the oral presentations are 110 spread across communications, soft computing, VLSI, Embedded systems, Signal, speech and Image Processing, Artificial Intelligence etc. The papers will undergo further review to publish in indexed International Journals after the completion of this conference.

There were 4 Keynote talks on Semiconductors and materials by Prof. S. Torii, Kumamoto University, Japan, Biomedical signal processing by Prof. Steve. S. H. Ling, UTS, Australia, Cloud data management by Prof. Ho Chiung Ching, Sunway University, Malaysia, Advances in Communication technologies by Prof. Dr. M. H. Kori, Advisor Validus Technologies USA.

The two-day conference scheduled was divided into 13 sessions with session chairs from esteemed organizations nationwide.

We take this opportunity to welcome all the delegates of the conference. On behalf all the ACCES team, we would like to thank all the authors, reviewers, sponsors and keynote speakers for their support and co-operation. We hope all the participants will have a fruitful and beneficial experience.

> **Dr. B. Anil Kumar** Program Chair

Dr. Hima Bindu Valiveti Organising Chair

ACCES 2020 CONFERENCE-PROGRAMME SCHEDULE

Day 1: 18 Sep 2020 (FRIDAY)

Time

9:00 AM-10:00AM Registration & Conference Inauguration 10:00 to 11:00AM **Invited Talk-1 by S. Torii, Kumamoto University, Japan**

TECHNICAL SESSIONS

Time/ Venue	Online	Online	Online
11:00AM- 12:30PM	Session I Wireless and Cognitive communication Chair: Dr. Sabat, HCU Co-Chair: Dr. D.L. Chaitanya (8)	Session II Text, Speech, Image & Video Processing Chair: Dr. Dileep Kumar Yadav, Galgotias University Co-Chair: Dr. K. Shashidhar (8)	Session III Family of Antennas Chair: Mrs. S. Sudha Rani, DLRL Scientist 'F' Co-Chair: Dr.Vijay Saradhi (8)
Paper Codes:	M_54, E_35, M_53, E_67, M_06, M_2, M_63, E_82	E_63, Paper_09, E_42, E_62, E_69, E_100, M_61, E_45	Paper_05, M_04, M_64, M_19, M_12, E_34, M_76, M_104
12:30PM- 1:30PM	Keynote Talk-2 By Prof. S	teve.S.H.Ling, UTS, Australia	
1:45PM- 3:15PM	Session IV VLSI & Signal Processing Chair: Dr.P.V.Rao, VTU Co-Chair: Dr.G.Mamatha (8)	Session V Advanced Elctronics & Communications Chair: Dr.G.Rama Murthy, Mahindra University Co-Chair: Dr. Asisa Kumar Panigraphy (8)	Session VI Technology & Management Chair: Dr.G.Karthik SCETW Co-Chair: Dr.D.Jayanthi (8)
Paper Codes:	Paper_10, E_13, M_40, M_23, M_92, M_95, E_33, M_103	M_88, E_23, M_14, M_38, M_39, E_29, M_86, E_97	E_52, M_21, M_24, M_102, M_94, E_66, M_17, M_84

Day 2: 19th September 2020 (Saturday)

10:00 AM to 11:00 AM Keynote Talk-3: Prof. Ho Chiung Ching, Sunway University, Malaysia

Venue	Online	Online	Online
11.00AM- 12:30PM	Session VII: Smart World of IoT Chair: Dr.R.Hafeez Basha, BRCORP Co-Chair: Dr.V.Hima Bindu (9)	Session VIII: AI for Biomedical applications Chair: Dr.R.Arthi, SRM University, Chennai Co-Chair: Dr.T.Padma (9)	Session IX: Deep Neural Networking Chair: K.Susant Panigrahy, VIT Bhopal Co-Chair: Dr. NV Ganapathi Raju (8)
Paper IDs:	M_22, M_35, E_50, E_51, M_51, M_52, M_79, M_97, M_98	paper_11, E_17, E_18, E_39, M_55, E_36, E_16, Paper_12, E_90	M_07, M_25, M_69, M_72, E_14, M_85, M_62, E_65
12:30PM- 1:30PM	Keynote Talk-4: Prof. Dr. M.H Technologies	.Kori, Advisor Validus USA	
1:30PM- 3:00PM	Session X: Computing Techniques Dr. Pradeep Mallick, KIIT Co-Chair:Dr.K.Swaraja (9)	Session XI: Wireless Network & Reliability Issues Chair: Dr.P.Trinatha Rao, GITAM Hyd. Co-Chair: Dr. DL Chaitanya (9)	Session XII: ElectroMechanical Elements & Power Systems Chair: Dr. K.Anil Kumar, NIT Warangal Chair: SNV Ganesh (9)
Paper Codes:	E_60, M_58, M_10, M_60, M_82, M_57, E_6, E_88, M_96	E_48, M_68, M_91, E_84, M_90, E_99, M_20, E_47, M_26	M_83, M_87, E_104, E_32, M_89, M_93, M_71, E_11, M_73
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Paper Codes:	M_05, M_75, E_91, M_6	56, E_24, M_33, E_76, M_43	
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Program Chair ACCES-2020



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1Research Scholar, Department of ECE, JNTUA, Anathapuramu, A.P, India

2Associate Professor, Department of ECE, PBRVITS, Kavali, A.P, India. mail2bhaskarp@gmail.com

Abstract. This paper presents a design of a monopole wideband antenna with a simple circular-shape. The first four characteristic modes are used to study the characteristic mode analysis (CMA) of the radiating patch. For the wideband operation, the modal significance values and mode currents of the circular patch are considered. The proposed antenna is printed on an economical FR4 substrate of $40 \times 45 \times 1.6 \text{ mm}^3$ with an impedance bandwidth of 77 % (2 to 4.6 GHz). The antenna covers LTE, WLAN, WiMAX, WI-Fi, and X-band applications.

Keywords: Characteristic modes, Surface currents, Circular patch, Modal significance. Copy Rights reserved@ ACCESS-2020



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2. Content-based Image Retrieval using Gaussian-Hermite Moments K Meenakshi, K Swaraja, Padmavathi Kora, T Yasasvy, P Lakshmi Kala

Abstract: The rapid growth in the transfer of multimedia information over the Internet requires algorithms to retrieve a query image from a large image database. In this work, a Content Based Image Retrieval (CBIR) system with a shape based local ane invariant Gaussian- Hermite moments (GHM's) which are known to be rotational invariants is proposed. To evaluate the performance of proposed CBIR, a series of experiments on COREL-1k database are conducted and compared with CBIR using Exact Legendre Moments(ELM's) with two classiers- Random Forest (RF) and K Nearest Neighbors(KNN). The experimental results demonstrate that with RF classier higher Precision Recall (PR) scores are obtained with GHM's at moment order between 9 to 11. Compared to KNN, the accuracy of GHM's with RF is improved by 78 %. The proposed algorithm shows better performance in terms of precision/recall score and accuracy compared to ELM's for GHM's at moment order between 9 to 11.

Keywords: Gaussian Hermite Moments Accuracy Confusion matrix Precision Recall Copy Rights reserved@ ACCESS-2020



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3. ACPI Sleep States Verification IN x86 SOC V Nandini, Dr. K Swaraja, Meenakshi K, Padmavathi Kora

Abstract: ACPI (Advanced Configuration Power Interface) is a industry standard specification that allows directed Operating system power management of hardware elements. It consists of various states that are span across each individual component of a system. This paper gives ACPI Sleep states verification that are present in Global states (GX) of ACPI.G1 state is called Sleeping state where sub sleep states are present for keeping Hardware elements in sleep mode to reduce power consumption and increase the battery life. *Keywords: GX* are Global states, *G1* is sleeping state. *ACPI sleep-states verification*

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4. Predictive Machine Learning Model for Early Detection and Analysis of Diabetes Mounika Bodanapu ECE, GRIET, Dudipala Jashwanth Reddy ECE, GRIET, Sindhu Saidhugari ECE, GRIET, Tuniki

Pranayteja Reddy ECE,GRIET Gugulothu Jyothsna Sri ECE,GRIET, Nimmala Sagar Reddy ECE,GRIET Abstract: Diabetes is a long-lasting disease with the potential to cause a worldwide health crisis. International Diabetes Federation(IDF) has proven that 382 million people are living with diabetes across the world and this number can be doubled in the next 15 years. Diabetes, also known as Diabetes Mellitus is a disease caused due to the increase of glucose level in the blood. This disease can be diagnosed using various physical and chemical tests. However, untreated and undiagnosed diabetes could damage human organs such as kidney, eye, heart, nerves, foot and can also lead to the death of the human. So, early prediction and analysis of Diabetes can reduce the death rate to some extent. Thus, the proposed work aims at designing a model which predicts the diabetes in human with maximum accuracy using machine learning algorithms like Support Vector Machine (SVM), K Nearest Neighbors (KNN), Logistic Regression (LR), Navies Bayes (NB), Gradient Boosting (GB) and Random Forest (RF) Classifier. Analysis is performed on Pima Indian Diabetes Database (PIDD) which is taken from Kaggle data repository. The performance of all the six algorithms is compared using Accuracy score, Receiver Operating Curve (ROC), Precision, Recall, F-measure evaluated from each model.

Keywords: Diabetes, SVM, KNN, Logistic Regression, Navies Bayes, Gradient Boosting, Random Forest Classifier, PIDD, Accuracy score, ROC AUC Curve, Precision, Recall, F-measure, Machine Learning.

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International Conference on ADVANCES IN COMMUNICATIONS, COMPUTING AND EMBEDDED SYSTEMS September 18 – 19, 2020 ISBN 13: 978-81-930222-9-0

5. Detection of P wave, QRS complex and T wave from Cardiac Signal for Arrhythmia Classification Ch. Usha Kumari, Md. Ageel Manzar, N. Tarun Varma, A. Reethika,

B. Priya Samhitha, J. Rohitha Sivani, Mirza Kamran Ali, S. Pranav Kumar Department of ECE, GRIET, Hyderabad, India

ushakumari.c@gmail.com, ntvarma8@gmail.com, aqeelmanzar34@gmail.com

Abstract: Irregular heart beat results in heart diseases. Cardiac deaths are most commonly seen across the globe. Detecting the heart problems in early stage can reduce the death rate. Electrocardiogram (ECG) is one of the most popular method for diagnosing different arrhythmia's. Arrhythmia means irregular activity of heart or abnormal heart rhythm. In this paper, cardiac signal peaks P-wave, QRS complex and T-wave are detected for classifying the type of arrhythmia. These are the main components of ECG signal. P-wave is of very small duration, it is explains about the atrial depolarization. The QRS complex may include combination of Q-wave, R-wave and S-wave. But every QRS complex may not contain Q-R-S waves. Its explains about ventricular depolarization. Where as T wave is about ventricular re-polarization. S-Golay filter is used for denoising. This is used for smoothing the data which thereby, increases the precision of data without distortion of signal tendency. The patient data is collected from MIT-BIH Arrhythmia database for analysis. The simulation is done in Matlab software.

Keywords: Electrocardiogram (ECG), Arrhythmia, PWave, QRS Complex, T wave, Savitzky-Golay (S-Golay). Copy Rights reserved@ ACCESS-2020





6. Machine Learning Based Power Saving Mechanism for Fridge: An Experimental Study using GISMO III Board

N V Ganapathi Raju A Radhanand K N Balaji Kumar nvgraju@griet.ac.in radhanand.anantha@gmail.com kumarkot@gmail.com Pradeep Reddy G P Sampath Krishna Reddy pradeepreddygriet@gmail.com xpress2sampath@gmail.com Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad

Abstract: Power consumption plays an important role in our daily life. Many people still use Non Renewable energy sources to generate power. As the resources (fossil fuels, coal, etc) are limited, power should be utilized effectively. One of the Appliance that consumes more power in the house is Fridge. People sometimes forget to close the Fridge Door after their usage, or sometimes door may not be closed properly which will lead to more power consumption. The objective of the proposed work is to find out the status of Fridge door using machine learning algorithms. Authors also discussed about the experimental results to validate the proposed concept.

Keywords: Fridge, Power Consumption, GISMO III, IoT, Classifiers

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7. UWB Transmission through Human Thorax: An Index of Cardiac Health Kedar Nath Sahuı, Challa Dhanunjaya Naidu2, and Jaya Sankar Kottareddygari3 1Department of ECE, Stanley College of Engineering and Technology for Women, Hyderabad, India (knsahu72@qmail.com).

2Department of ECE, VNR VignanaJyothi Institute of Engineering and Technology, Hyderabad, India (cdnaidu@yahoo.com).

<u>3Department of ECE, Mahatma Gandhi Institute of Technology, Hyderabad, India (kottareddyjs@gmail.com).</u> **Abstract:** There are many applications which require remote and non-invasive measurement of heartbeat of a human being using an ultra-wideband (UWB) radar. Sophisticated models and their analysis need to be referred before the design of a practical radar prototype. In this paper, i) a UWB wave propagation model of human thorax and ii) the power transmission coefficients estimated from the simulations of the model in the range 1-10 GHz using MATLAB are presented. The study reveals that there is a periodic variation of the transmission coefficients in correlation with the instantaneous physical dimensions of an active heart.

Keywords: human heartbeat, tissue dielectric properties, ultra-wideband, transmission coefficient.





8. Automotive Radar using AWR2243 Booster Pack

Arvind Vishnubhatla, Electronics and communication Department, Gokaraju Rangaraju institute of engineering and Technology Hyderabad, India

vainfo66@gmail.com

Abstract: In developing countries the growth in the number of motor vehicles is the most significant factor in the rise of road fatalities and injuries. It may be observed that 1.35 million people die every year owing to crashes on road. Most of the accidents can be prevented if the events are detected automatically 1-2 seconds in advance. Texas instruments has come up with a new evaluation board AWR2243 having a single chip operating at 76 to 81Ghz having a FMCW transceiver. This can be instrumental in adaptive cruise control, emergency braking and automated highway driving. A FMCW (frequency modulated continuous wave) obtains the range and velocity from a beat signal. Here mmwave sensors use minimal power consumption to sense range and velocity and the required angle. The device is interfaced to an external DSP host processor which uses a SYNC_IN signal to start the radar frames. The periodicity of the frames is suitability programmed. The processing provides a high level of performance and flexibility. The signal has three parallel transmit chains and four parallel receive chains. Each receive channel has an LNA, mixer, IF filtering, A2D conversion and decimation. A two- dimensional FFT algorithm is implemented on the host DSP processor.

Keywords: FMCW, beat, transmit, receive, mmwave, range, velocity

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9. Cellular IOT using nRF9160 kit

Arvind Vishnubhatla, Electronics and communication Department, Gokaraju Rangaraju institute of engineering and Technology Hyderabad, India vainfo66@gmail.com

Abstract: The current vision of internet of things aims at connecting anything with everything. It is estimated that there will be 18 billion connected devices in 2022. Applications like utility meters, robotics, smart street lighting, process automation, solar and wind farms are expected to grow. High end requirements for automated driving, industrial automation and e-health exist. Cellular IOT is expected to bring new use cases to address latest requirements in the market. There is a need to provide large coverage in a power efficient manner while providing a high battery life. There is a need to have a kit which connects seamlessly and has a small form factor. The requirements on latency and throughput are relaxed in some cases while stringent in others. Stringent requirements make use of more radio resources. There is increased demand for system capacity and network availability. In this paper we make use of nRF9160 kit a low-cost device where a reduction in the cost and complexity has been achieved. The performance objectives of coverage, throughput, latency, capacity, power efficiency and complexity are met. This kit provides a reliable and future proof solution in the long term. The kit is built for the global market and allows roaming over multiple networks.

Keywords: Cellular IOT, coverage, latency, throughput, system capacity, network availability, MQTT, cloud. Copy Rights reserved@ ACCESS-2020





10. Unit Testing of Speech recognition over Mobile channels

Arvind Vishnubhatla, Electronics and communication Department, Gokaraju Rangaraju institute of engineering and Technology Hyderabad, India

vainfo66@gmail.com

Abstract: When speech is transmitted over mobile channels, it gets degraded. In this paper the speech to be transmitted is parameterized using front end feature extraction to create Mel cepstrum parameters. These are then compressed to lower the rate of data transmission. To this error coding is added. At the receiver these features are decoded to regenerate the front end features. In this paper we take extraction and compression code from ETSI to test the correctness of distributed speech recognition by compiling the program under linux environment. A careful planning of the test stimuli helps create useful test cases. Testing is performed meticulously to verify the correctness of the standard.

Keywords: speech, recognition, Adaptive Multirate audio, stimuli, testing, linux

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International Conference on ADVANCES IN COMMUNICATIONS, COMPUTING AND EMBEDDED SYSTEMS September 18 – 19, 2020 ISBN 13: 978-81-930222-9-0

11. Classification of fresh vegetables through deep learning and neural networks Arvind Vishnubhatla, Electronics and communication Department, Gokaraju Rangaraju institute of engineering and Technology Hyderabad, India

vainfo66@gmail.com

Abstract: In the modern age it is customary to employ machine learning to perform tasks characteristic of human intelligence. Machines are trained to use their own senses like planning, pattern recognition and image recognition. The main objective of the project is to use machine learning to identify freshness of vegetables and weed out rotten ones. The machine needs to be trained with huge amounts of data so that the model can infer certain relations and common features related to the objects. To perform this task we need to import a set of libraries and split our data into the training set and the test set. Building the CNN consists of three parts Convolution, Polling, Flattening. Convolution extracts features from the input image. Here the spatial relationship between the pixels is preserved. While training your data, you need a lot of data to train upon. A large number of people are deployed for sample collection. To prevent overfitting we use data augmentation. This is followed by training the model. With increasing number of epochs, the accuracy will increase. Now we test a random image and get the machine to comment on its freshness

Keywords: fresh vegetables, machine learning, Image Recognition Classifier, Dataset, CNN recognition Copy Rights reserved@ ACCESS-2020





12. Exhortation System for E-Commerce Apps Using CCA and Implicit Feedback *G.Vijendar Reddy , Shaik Arshia Zainab , Pitla Laxmi, J. Akanksha Reddy, Vaddeti Sanjana*

Abstract: E-commerce has changed the perspective of shopping on the whole. Anything materialistic can be bought online without physically walking up to a store. This model is inclined to recommend products that match the user needs. There are multiple systems previously designed to suggest products to the customers. They all use factorization, wherein a user is matched to a product one to one, and as a result of which there is a long list of recommendations that seem eligible for purchase, thus creating confusion. Our model solves this problem by collecting session details. Each session includes events like searching, viewing, and adding to cart. The idea behind collecting these details is to understand what products that the customer requires are. Machine learning is a multidisciplinary branch of technology, which deals with learning from data and predicting the results. Inculcating machine learning into our project has helped us design a model, wherein user specifications are correlated with the products. Precise recommendations are produced as a result, which promotes the purchase rate, leading to an increase in revenue. Thereby are proposed model is efficient and focuses on customer satisfaction and delivering the services as per their requirements.

Keywords: CCA, Python, Implicit Feedback, Machine Learning

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13. A Low Leakage Power Binary CAM design using increased substrate bias 7T SRAM cell Surekha G, Balaji N, Padmasai Y

yandamurisurekha@gmail.com, prof.balaji.ece@gmail.com, ypadmasai@gmail.com

Abstract: In this paper, a low leakage power Binary CAM design is proposed to reduce the leakage power in nano-scale CMOS very large scale integration (VLSI) systems by increasing the substrate bias for extra nmos transistor added to a 6T SRAM cell. The proposed design was simulated in CADENCE using 90nm CMOS technology at different operating temperatures and different supply voltages. Analysis of the results shows proposed Binary CAM leakage power reduction is reduced by 61% with conventional NOR type Binary CAM. The proposed design demonstrates that it not only decreases the leakage power and also the dynamic power of the circuit. Hence the total power dissipation in nano-scale CMOS integrated circuits is reduced in large amount.

Keywords: gate leakage, leakage current, leakage power, substrate bias voltage, sub-threshold leakage. Copy Rights reserved@ ACCESS-2020





14. Design and analysis of Inset fed Circular dual band Microstrip Patch Antenna for WLAN frequencies

1st Shilpa Bagade, ECE, Research Scholar (at KLH), Hyderabad, India, shilpa.me1437@gmail.com;
2nd Dr.L Koteswara Rao, ECE, Professor(at KLH), Hyderabad, India, ecehod@ klh.edu.in;
3rd N Arun Vignesh, ECE, Assoc. Prof (at GRIET), Hyderabad, India, arunvignesh44@gmail.com;
4th Vadladi Vijaya Kumar, ECE,Asst.Prof (at GRIET), Hyderabad, India, vijay20052009@gmail.com;

Abstract: A microstrip circular patch antenna with internal feed antenna with an oblong slot on the radiation part for the dual-frequency operation is proposed. The proposed antenna resonates at two frequencies i.e.2.45 GHz and 5 GHz, which can be used in applications like WLAN. The field configuration of the circular patch micro strip antenna can be analyzed with the help of modes. The mode buoyed by the micro strip circular patch antenna can be analyzed by considering the ground plane, the dielectric material between the ground plane and the patch as a cavity which is of circular type. The modes of the antenna with circular patch can be controlled by the means of a factor which is called radius. VSWR ratio is maintained below 2 for both bands operating in two different frequencies. The dominant mode for circular patch is TM11. The design can be made to resonate in TM10 and TM11. In both the modes there is no change in the radiation characteristics and plane of polarization also doesn't change. By operating in two different frequency bands we can able to achieve good radiation characteristics without effecting the VSWR thus providing good impedance matching for the two operating frequency bands.

Index Terms: circular antenna, inset feed, Return loss, dual band and WLAN applications.

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15. EVALUATING FUTURE STOCK VALUE ASSET USING MACHINE LEARNING

R. Soujanya, P. Akshith Goud, Abhishek Bhandwalkar, G. Anil Kumar

1, 4 Assistant Professor, Department of CSE, GRIET

2, 3 UG Student, Department of CSE, GRIET soujanya96@gmail.com, akki.akshith340@gmail.com, b.abhishek2912@gmail.com, ganil114@gmail.com

Abstract: Stock Trading is one of the intuitive ways through which people make money. It operates just like an auction house where buyers and sellers negotiate prices and make trades. Stock trading involves putting our calculative minds and applying for some crunch numbers on the graphs to get the desired profits. But with the advancement of technology stock trading has reached another level. With algorithmic trading forex bots and predictions coming into the picture, people are trying to make much more money than the usual ways which involves going to the market with their gut feeling. This paper will be telling about stock prediction using machine learning as a tool to determine the future value of a stock. There is a lot of quantitative and technical analysis that goes into the stock prediction when done by the stockbrokers which are accurate up to a great extent or sometimes isn't. But there is a better scope to improve our prediction by using certain machine learning models. In this paper, the model will be using the linear regression model to predict stock prices for capitalizations in different markets employing assets with daily and up to date minute frequencies.

Keywords: Stock market, Stock prediction, Machine Learning, Linear Regression





16. Big Data Analytics in Healthcare using Machine Learning Algorithms: A Comparative Study Dr. A. Sai Hanuman, R Soujanya, PM Madhuri,

Department of Computer Science and Engineering, GRIET, Bachupally, Hyderabad, Telangana, India a_saihanuman@hotmail.com, soujanya96@gmail.com, pmmadhurii8@gmail.com

Abstract: In recent years, massive amounts of data in different forms have been handled in healthcare applications and this data generated by various institutions around the world and, collectively, this heterogeneous data is referred to as big data. The term big data refers to data with certain characteristics, volume, velocity and variety. The health industry sector has been confronted by the need to manage the big data being produced by various sources, which are well known for producing high volumes of heterogeneous data. We can use the Big Data analysis for effective decision making in healthcare domain using the existing machine learning algorithms with some modification to it. When we have a huge data set on which we would like to perform predictive analysis or pattern recognition, machine learning is the way to go. In this paper, we have provided a brief overview of big data and it's characteristics and types of big data analytics which plays a significant role in healthcare informatics and greatly influences the healthcare system. We also proposed comparative study of machine learning algorithms in this paper. In order to predict the accurate results in health care domain we have to make good use of all the traditional machine learning algorithms.

Keywords: Big data, Big data Analytics, Predictive Analytics, Machine Learning, Apache Spark

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17. Efficient Tumor Detection in MRI Brain Images

Dr. Y. Srilalithaı, Katapally Manognya2, Pabba Keerthana3, Mudunuri Vineetha4 1. Professor, Gokaraju Rangaraju Institute of Engineering and Technology, srilalitham.y@gmail.com [2-4] B.Tech. Students Gokaraju Rangaraju Institute of Engineering and Technology

Abstract: The detection of brain of tumor is a laborious task as it involves identification, segmentation followed by detection of the tumor. It is a very challenging task to envisage uncommon structures in the image of human brain. An Image processing concept called MRI can be used to visualize different structures of human body. to view The Magnetic Resonance images (MRI) are used to detect the uncommon portions of human brain. This paper explores different noise removal methods accompanied accompanied by Balance-contrast enhancement technique (BCET) which results in the accuracy increase. Segmentation followed by canny edge detection is performed on the improved images to detect the fine edges of the abnormalities present. The model attained an accuracy of at most 98% in detecting the tumor or the abnormality in a human brain which determines the effectiveness of the proposed model.

Keywords: - *Brain Tumor, MRI Image, Fuzzy Clustering, Contour Map & Caney Edge.* Copy Rights reserved@ ACCESS-2020





18. VLSI Design of Efficient FIR Filters Using Vedic Mathematics and Ripple Carry Adder S. Samyuktha, Dr. D. L. Chaithanya

Abstract: Single constant multiplication (SCM) and multiple constant multiplications (MCM) are among the most mainstream plans utilized for low-multifaceted nature move include execution of finite impulse response (FIR) filters. While SCM is utilized in the immediate structure acknowledgment of FIR filters, MCM is utilized in the transposed direct structure structures. Regularly, the half breed structure FIR filters where the subsegments are actualized by fixed-size MCM squares give better zone, time, and force efficiency than those of conventional MCM and SCM based usage. To have an efficient mixture structure filter, right now, have played out a nitty gritty intricacy appraisal as far as the equipment and time devoured by the half and half structures. We find that the current half breed structures lead to an unfortunate increment of intricacy in the basic adder square. Along these lines, to have a more efficient execution, a variable size apportioning approach is proposed right now. To speed up the operation of the filter we will use Ripple Carry Adder and Vedic Multiplier. *Index Terms—Finite impulse response (FIR) filter, hybrid form FIR filters, constant multiplication schemes, vedic mathematics, CLAA*

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19. CT Image Classification of Human Brain using Deep Learning *K. Archana, B. Sairam, A. Sriraagh Rao, IT Department, GRIET, Hyderabad, India*

Abstract: Computed Tomography (CT) images are cross-sectional images of any specific area of a human body which allows doctors to see inside of a patient. CT scan is almost always the first imaging modality used to assess patients with suspected hemorrhage. A CT scan provides image reports in the form of grey shades. It is sometimes difficult to distinguish between two areas because the shades of grey in a CT image are occasionally similar. CT scan (Particularly "Non Contrast Head CT Scan") is the current guideline for primary imaging of patients with any head injuries or brain stroke like symptoms. To obtain any findings from the CT image, Radiologists or other doctors need to examine the images. Deep-learning is an important tool used in radiology and medical imaging which provides a better understanding of the image with more efficiency and quicker exam time. The main idea of this project is developing a model using classification algorithms which can be used to classify or detect hemorrhage in a CT image. The dataset consists of both normal CTs and CTs with hemorrhage. Deep learning is used to develop a model that can detect whether a CT image shows a hemorrhage or not.

Keywords: CT, Deep Learning, CNN, Hemorrhage

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20. Design and Analysis of Tagged-T Antenna for Multi band Applications *Aylapogu. Pramod Kumar*1, D. Venkatachari 1, J. Siddarthavarma2*

Department of Electronics and Communication Engineering, 1*Vardhaman College of Engineering, Hyderabad, India, 1Lendi Institute of Engineering & Technology, Vizianagaram, India, 2MVGR College of Engineering, Vizianagaram, India,

pramodvce@gmail.com1, venkatachari409@gmail.com1, siddartha_varma@yahoo.co.in2

Abstract: Now a day's wireless telecommunication system is increasing with rapid growth. In order to boost the gain and radio bandwidth of the antenna, the multiband functions are playing a vital role. The prime motto of this article is to high gain with a tagged –T antenna, it is designed with truncated ground for multi band applications. The proposed antenna covers a frequency in the range of 2GHz to 10GHz. The structure has led to an outstanding requirement of multiband antennas because of the growing multi-utility structure. The notch on the antenna facilitates the multiband activity, improvise the gain. The alteration of the ground face will assure the improvement of the radio band. The antenna is developed with Rogers Substrate with a dielectric consistent of 4.4, fall tangent of 0.0009 and having a density of 1.6mm. The proposed antenna is used for various applications such as X-band, satellite applications etc. The simulation results are verified with the aid of Ansys HFSS software. This design achieves the S11 losses are -31.54dB and -30.02dB at respective frequencies 8.84GHz and 3.40GHz. Similarly the gain is 1.75dB, bandwidths of 5.4GHz.

Keywords: Communications, Tagged-T, High Gain, Band width, Multiband applications.

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International Conference on ADVANCES IN COMMUNICATIONS, COMPUTING AND EMBEDDED SYSTEMS September 18 – 19, 2020 ISBN 13: 978-81-930222-9-0

21. Transformation Electromagnetics: Mathematical Viewpoint K N V Khasim, Research Scholar, Sathyabama Institute of Science and Technology

Email: khasim.knv@griet.ac.in

Dr. B Rajasekar, Associate Professor, Sathyabama Institute of Science and Technology Email: rajasekar.ece@sathyabama.ac.in

Abstract: Coordinate transformation of electromagnetic field relations by specific mathematical model or technique acquired great attention in twenty-first century electromagnetic devices modelling. The Transformation Electromagnetics [TFEM] has another familiar name transformation optics [TFO]. The building block concept of TFEM is that Maxwell equations do not change their form when the coordinates are transformed. TFEM based device design mainly uses artificial materials such as DNG (Double Negative), EBG (Electromagnetic Bandgap) materials. The material properties may change with coordinate transformation; still Maxwell equations do not change their form. The steps involved in their mathematical modelling are discussed in this paper.

Index Terms: Electromagnetism, Coordinate transformation, Lorentz transformation, Minkowski Space and time, Jacobi Matrix, Artificial materials.





22. Real Time Fruits Quality Detection with the help of Artificial Intelligence Ms., Punna Sai Priyaı Ms. Naga Jyoshna2 Dr. Tata Jagannadha Swamy3

M.Tech (Embedded Systems) Assistant Processor Professor, Dept. of ECE, GRIET, Hyderabad Dept. of ECE, GRIET, Hyderabad Dept. of ECE GRIET, Hyderabad

punnasaipriya23@gmail.com jyoshnajetty@gmail.com jagan.tata@griet.ac.in

Abstract—: One of the major quality of grading fruits is its appearance. Appearance is effects the marketing and choice of consumer. Color, texture, size, shape are used to find quality of fruit. But the sellers controlling the external quality of fruits to get high profit. In earlier observations, implemented products, computer vision systems for external controlling quality so grading and classification of fruits is based on observations. The proposed system depend on image processing to classify and grade quality of fruits by using mean of image, color and HOG(Histogram of gradient) feature extractions are used to classify the fruit quality. All machine learning algorithms are used to find the better accuracy of data how it is predicting. In proposed method first data set is collected, then preprocessing is applied for better results. Machine learning algorithms (K-nearest neighbor (KNN), Support Vector Machine (SVM), and PCA is used for dimension reduction and to get good accuracy to implement the system. For big data preprocessing and to get better results Deep learning (CNN) is used to test the fruit in real time world with result and audio sounds. Audio is used to detect object by hearing also. Index Terms—Internet of Things, Object Management, Database Management, Embedded system Technology, Location Identification

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23. Historical Text Retrieval with Spectral Data and adaptive variants of Bacterial Foraging *Ch. Venkata Krishna Reddy, T.R. Vijaya Lakshmi*

Abstract: Tracts dealing with Ayurveda, Unani and Siddha have been well preserved on historical manuscripts. Despite the conventional photography of the manuscripts are less damaging, they do not aid to decipher the faded or unreadable text. Extracting the text embedded in an unstructured background of historical manuscripts is far reaching. In the present study, fragile historical manuscripts are digitized using a contact-type profilometer and the unstructured noise is eliminated by computing Fuzzy-Entropy based threshold using Bacterial Foraging algorithm. In order to overcome the slow convergence rate of the algorithm with fixed parameters, the performance of its adaptive variants are evaluated to compute the optimum threshold. The simulation results obtained for Palm-leaf text extraction with different thresholds are presented. *Keywords:* Historical palm-leaf manuscripts, Depth of incision (spectral feature), Fuzzy-Entropy based

threshold, BFOA, variants of BFOA

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24. An affordable, scalable, open architecture, IoT eco-system for the academic community *A. Radhanand, K. N. B. Kumar, Swetha Namburu*

Abstract: Today's Internet of Things (IoT) applications are extended from smart homes to e-health, cybersecurity, data analytics, logistics and management of assets. There are many upcoming IOT solutions and platforms like ThingWorx, Xively, and Yaler. However, the existing eco-systems are not vibrant because of high entry-level barrier and low potential for any stakeholder. Especially, the academic community require a comprehensible way to create IoT services, develop their skillsets and build applications around them. In this regard, this work presents an affordable and scalable IoT eco-system with an easily programmable hardware platform, a private web server on cloud and a user friendly mobile application.

Keywords: Internet of Things (IoT), GRIET IoT Sensors Module (GISMO) boards, arduino nano board Copy Rights reserved@ ACCESS-2020



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25. Improvement of Fault Tolerance in Smart Sensors using Roll Back and Parity Check Gadde Doondi Srinath*a, Mamatha Samson*b ; aAlumnus, Department of Electronics and Communication, GRIET, Hyderabad, India. bFaculty, Department of Electronics and Communication, GRIET, Hyderabad, India

Abstract: Fault-tolerant IoT (Internet of Things) architecture is the need of the hour when we foresee major developments in this sector. Fault tolerance can be established at various levels. IoT devices require fault-tolerant smart sensors. Coping with soft and hard faults in a smart sensor is a challenging task. In the past, the extensive efforts for fault tolerance were associated with on-chip memories. To detect the error in logic functions, numerous solutions already exist, but only a few of them allow the correction, which leads to an increase in overhead of hardware in non-processor design. In this paper fault tolerance in on-chip memories of the smart sensor is implemented using rollback mechanisms parity generator and checker using Xilinx ISE. *Keywords*: *Fault, Roll back, tolerance, memory, Internet of Things*.





26. Design and analysis of Dadda multiplier with Common Boolean Logic Krishna Sravani Nandam, Dept. of ECE, GRIET,Hyderabad, India, krishnasravani2396@gmail.com K. Jamal, Dept. of ECE, GRIET Hyderabad, India, kjamal24@gmail.com Anil Kumar Budati, Dept. of ECE, GRIET, Hyderabad, India, anilbudati@gmail.com Kiran Mannem, Dept. of ECE, GRIET, Hyderabad, India, kiranmannem14@gmail.com Manchalla. O. V. P. Kumar, Dept. of ECE, GRIET, Hyderabad, India, pavanomkar81@gmail.com

Abstract: Multiplier is the primary origin of compression algorithms. Multiplier analysis is used to expand the representation which is used in the healthcare sector to improve operating efficiency. With the help of a compressor, the multiplier can be used to provide inaccurate data. According to human visual levels, the inaccurate data can also be used to simplify the data in specific signal processing, without the impact of the previous data. The design of the multiplier provides a better result correspondences to the area and delay and having their own requirement for different functions. The multiplier can be used for high speed and less area in developing high operating frequency semiconductor, the enhanced data can be compared with different multipliers using 14.7 simulation and synthesis correspondences. The strategy used for the multiplier to provide the constraints of low area, high speed, high frequency in multiplier operations with the help of the multiple compression techniques of generated data. The low power includes a high power generator of fastest systems to ensure consistent speed. This paper's objective provides best results correspondence to the different multipliers. The multiplier can be used in the advancement of high operating frequency semiconductor for high speed and less area.

Keywords: 4:2 compressors, exact, approximate computing, delay, power, Ripple carry select, Carry Select Adder, Common Boolean Logic.

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27. Web based Optical Character Recognition Application using Flask and Tesseract Peketi Divya¹ Assistant Professor ECE GRIET, Mahesh Varma² Student GRIET, Uma Ratna Mouli³ Student GRIET,Srinivas⁴ Student GRIET,Gareema⁵ Student GRIET,Nikhil⁶ Student GRIET,Vishistha⁷Student GRIET

Abstract: Optical Character Recognition (OCR) is a methodology used to transform over checked pictures into editable content configuration. OCR is basically the mechanical or electronic interpretation of manually written pictures or typewritten content into machine-editable content. Many different types of Optical Character Recognition (OCR) tools are commercially available today; it is a field of research in pattern recognition, man-made reasoning and machine vision. In the proposed work images processed independently (.png, .jpg, and .gif files). Manually written acknowledgement is utilized regularly to depict the capacity of a PC to translate human composition into content. This may take in one of the two different ways, either by examining written content or by composing straightforwardly on fringe input gadgets. This work also assembles something comparative utilizing an Optical Character Recognition (OCR) tool from Google Tesseract OCR Engine alongside python and OpenCV to specific characters from images. Primarily, in this proposed work a website is being set up using a web framework called Flask which is written in Python. Finally, the objective of this to deploy a web based Optical Character Recognition (OCR) using Python and Python based web tool i.e. Flask and the Tesseract engine. The communication protocol thus used is HTTP. The maximum accuracy obtained by authors is 94% for handwritten black & white images and 87% for handwritten color images. Authors continued their research for digitized images and the results obtained are 98% for black and white and 93% color images.

Keywords: Optical Character Recognition, Flask Framework, Tesseract, Python Tesseract, HTTP sockets Copy Rights reserved@ ACCESS-2020





28. High Gain Switched Beam Yagi-Uda Antenna for Millimeter Wave Applications Aylapogu.PramodKumar 1, Donga. Madhu 1, D. Venkatachari 2, J. Siddarthavarma 2 Department of Electronics and Communication Engineering 1VIGNAN's Institute of Information Technology, Duvvada, Visakhapatnam, India 1Vardhaman College of Engineering, Hyderabad, India 2Lendi Institute of Engineering and Technology, Vizianagram, India. pramodvce@gmail.com1, madhudonga@gmail.com1, Venkatachari409@gmail.com, siddartha_varma@yahoo.co.

Abstract: In this study, a high gain switched beam Yagi-Uda antenna designs for Millimeter wave applications are presented. The suggested antenna has a switched mechanism among the successive elements of the radiating patch. The overall size of the proposed antenna has 1.41x31.51mm2, thickness of 1.6mm, Rogers Substrate with a dielectric constant of 4.4 and loss tangent of 0.0009. The main intention of this article is to develop a high gain and less interference at higher frequencies. Moreover, it is suitable for millimeter wave applications. The slots on the antenna will improvise the overall gain of the system. The proposed antenna energizes at 24GHz; with the following elements 5, 7, 9,11,13,15 and 17. According to the simulation measurements the proposed antenna achieves the return loss is -30.6dB, gain 5.91dB, directivity 7.818dBi; VSWR is 1.06 at the frequency. These simulations' results are verified with the aid of CST-Microwave studio. *Keywords: High Gain, Switched beam, Yaqi-Uda, Mm wave.*

Orus. Thyn Galli, Switchea Dealli, Tagi-Oaa, Min wave.

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International Conference on ADVANCES IN COMMUNICATIONS, COMPUTING AND EMBEDDED SYSTEMS September 18 – 19, 2020 ISBN 13: 978-81-930222-9-0

29. Design of a constant-bandwidth variable-gain amplifier for 5G Receivers

Prasad Yogesh, Dr. Manjula J, SRM Institute of Science and Technology, Kattankulathur, Tamilnadu, India Email: yogeshprasad1993@gmail.com

Abstract: This paper describes the designing of the Variable Gain Amplifier for 5G receivers. Novel gain boosting technique is introduced in order to achieve more amplification at a higher frequency. The designed Variable Gain Amplifier provides continuous gain from 3.5GHz to 4.2GHz frequency range. At the frequency of 700 MHz the noise spectral density is 30.3936 nV/ \sqrt{Hz} . The designing and simulations are performed using the TSMC 45nm process technology using the Cadence Virtuoso tool. The overall power consumption is 0.0156mW under the supply voltage to 1V.

Keyword: 5G receiver VGA Gain Booster Technique





30. Smart Non-Invasive Haemoglobin Measurement Using Portable Embedded Technology Tatiparti Padma 1, Chintalapati Usha kumari 2 1,2Dept of ECE, GRIET, Hyderabad, Telangana

Abstract: Haemoglobin plays a major role for the existence of the healthy human being it carries oxygen supply to every cell for its survival in the entire body. As its level varies from person to person between 12-17 grams per decilitre if very high or low cause diseases. Usually low haemoglobin cause anaemia in many of the women during pregnancy. In the present article the haemoglobin measurement is done noninvasively using the photoplethysmography method at the fingertip by Infrared LED with a wavelength of (880 – 940) nm and Red LED with wavelength of 660nm. The empirical calculation of Haemoglobin estimation is carried indirectly through model of oxygen saturation in skin-tissue- bone attenuation of the light on to the extremities. The analysis is supported by the Arduino IDE and MATLAB toolboxes for filtering the noise in signal and processing for target parameters. Further these real time parameters were sent to expertise to check for corrective ness and with the actual invasive methods for diagnosing its course of action. Internet of Things (IOT) technology to the outside world communication through Android mobile App.

Keywords: Haemoglobin, Plethysmography, Oxygen saturation, Microcontroller, Arduino IDE, MATLAB, Android mobile App, Think speak.

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31. Intelligent Car Anti-Theft Face Recognition System

Dr. V. Akila, K. Sriharshini, P. Sravani, D. Shravanthi, Risitha Gopi, Information Technology, GRIET Dr. T. Sheela, Sri Sai Ram Engineering College Hyderabad-India Hyderabad-India Chennai-India akila_be@yahoo.co.in

Abstract: Security and safety of the car is the major problem of vehicle users in the present situation. The growth in Biometric Technologies has provided a way to solve the safety and security problems. Here, we use Open CV Face Detection Subsystem (FDS) which works using Global positional system (GPS) and Global system for mobile communication (GSM) module along with Arduino. This model provides a cheaper cost security system for four or more-wheeled vehicles. This project describes the foremost module for Open CV Face Detection Subsystem (FDS) which takes photos of driver using Open CV algorithm and compare it in database provided with photos of different drivers. The other modules are being useful to send all the authorized information about vehicle to the owner. The whole system works based on Arduino module. So by this system we can keep track of our vehicle in a very cheaper cost and more accurate. Using this system the identification of the thief will be easy and tracking the location of the car will be faster and cheaper than earlier method.

Keywords: Global Positioning System (GPS), Global System for Mobile Communications (GSM), Open CV Face Detection System, Arduino.





32. IOT BASED NICU BABY HEALTHCARE MONITORING SYSTEM

Ms. NIVETHA .B, Assistant Professor, BME, Jerusalem college of Engineering, Chennai, India, nivethabalu89@gmail.com

Mr. SRIRAM MANISH KUMAR .E, Lecturer, Annamalai Polytechnic College, Chettinad, India srirammanish93@gmail.com

Abstract: The main objective of this project is especially designed and developed for Infant and Neonate ICU's. In health care domain deaths due to delayed diagnosis of disease for Infants and Neonates become accountable. To overcome this scenario, dedicated devices for Infants and Neonates are essential. In this design, the sensors used for monitoring are more suitable for Infants and Neonates.

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33. Efficient Design of a Low Power DCT Architecture using Reconfigurable CORDIC Algorithm for Image Compression/Decompression

Shaik Farheen Anjum¹, K Meenakshi², K Swaraja³, Padmavathi Kora⁴, Mamatha Samson⁵ ¹M. Tech Scholar, ^{2,3,4,5}Professor, GRIET, Hyderabad, India

Abstract: This paper introduces a Discrete Architecture of Cosine Transformation (DCT),built on Reconfigurable "Coordinate Rotation digital Computer (CORDIC)" design.One of the widely used method in digital applications is DCT. It has been broadly used in refining the picture data,specifically tosummarize the image confining for optimal performance.It is also effective in converting complex data into frequency domain, where discreteprocesses, like spread-spectrum, data compression, data watermarking, can be achieved in simple and more useful way.Thecrucial issue taken in this work is based on the fact that every calculation in DCT is not criticallysignificant when computing the spectrum domain outputcoefficients. Hence, by allowing for the compressed DCT coefficients,the CORDIC iteration can be reduced without change in picture quality and power consumption.As previous architecture lookahead CORDIC approach is complex and requires more area and power so we are proposing Reconfigurable CORDIC algorithm to obtain power savings.This architecture can be carried out ono.13umCMOS technology and proven simulationsreveals that reconfigurable DCTobtained reduced power consumption from 23.7% to 51.3% without any damage in the picture quality. This is implemented using Xilinx 14.2/Modalsim PE10.4a and MATLAB software.

Keywords: CORDIC, Rotation mode, Paralleladder, Scalefactor, FPGA.





34. Hardware lightweight design of PRESENT block cipher

Gonur Sravya, M Tech, GRIET Hyderabad

Manchalla.O.V.P.Kumar, Ph.D Scholar, ECE, Sathyabama Institute of Science and technology, Chennai, TN, India and Asst. Professor, ECE, GRIET Hyderabad

Dr. G. MarlinSheeba, Assoc. Professor, ECE, Sathyabama Institute of Science and technology, Chennai, TN,

India

K. Jamal, Assoc. Professor, Department of Electronics and Communication engineering, ECE, GRIET Hyderabad

Kiran Mannem, Assoc. Professor, ECE, GRIET Hyderabad

Abstract: In present days the demand for security is increased, so that people gained interest to study on lightweight symmetric ciphers in computing fields like IoT. There are many different security primitives. By that it becomes very difficult to choose the particular primitive for particular application. There are different algorithms for different security primitives. At present embedded devices have the capability to communicate and transform simple dedicated devices into "connected Smart Devices". The variety of smart applications falls into this broad and growing extensive category. They include some category such as Retail, IT, Health, Bio Science, Industrial and networking. As increase in the technology IoT faces many challenges, like handling huge amounts of data, processing power deal with energy consumption, address security threats. In This paper presents a novel design for the lightweight block cipher PRESENT. Which is implements from AES cipher, which is also a one of the block cipher. AES is best for almost all applications, and all are mostly preferred block cipher. Now for updated world AES is not applicable for the some of the networks which are like RFID, sensors and some other networks. So that to avoid these network problems PRESENT is the ultra-light weight block cipher which has the equal importance to both security and hardware planning. The proposed design allows to study area-performance trade-offs and thus constructing smaller or faster implementations. When optimized by area, the proposed design exhibits smaller latency and fewer FPGA resources than representative related works in the literature.

Keywords: PRESENT cipher, ultra-light weight, less area, Cryptography, IoT

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35. Low Power Receivers for IoT Applications: Architectures and Circuit Design Techniques *R Sri Uma Suseela, and K S N Murty*

Abstract: The Internet of things (IoT) applications are increasing exponentially in the day to day life. The DC power consumption of an IoT radio is a critical design specification, and it directly influences the battery life and usage. Recently, both academia and industry involved in the design of such radio at low power with the innovative receiver and transmitter architectures. The 2.4 GHz Bluetooth low energy (BLE) and ZigBee transceivers are suitable for IoT applications with relaxed specifications requirements. This paper presents a review of the various low power ZigBee/BLE receiver architectures, and circuit design techniques include low voltage, sub-threshold, and current reuse. Similarly, the circuit design techniques in the on-off shift keying (OOK) receivers for IoT and Wake-Up applications presented.

Index Terms: IoT, Receiver, ZigBe, BLE, OOK, Low power, Wake-Up.





36. Advance Montgomery modular multiplier for CSA Architecture

¹M.Dharani ²Dr. P.Anil Kumar ³T.Venkatakrishnamoorthy ⁴N.Bharghavi ¹Assistant Professor, Annamacharya Institute of Technology and Sciences, Tirupathi, Andhrapradesh ²Associate Professor, CVR College of Engineering, Hyderabad, Telangana. ^{3,4}Assistant Professor, Audisankara Institute of Technology, Gudur, Andhrapradesh

Abstract: This paper proposes a simple and efficient Montgomery multiplication algorithm such that the lowcost and high-performance Montgomery modular multiplier can be implemented accordingly. The proposed multiplier receives and outputs the data with binary representation and uses only one-level carry-save adder (CSA) to avoid the carry propagation at each addition operation. This CSA is also used to perform operand precomputation and format conversion from the carrysave format of the binary representation, leading to a low hardware cost and short critical path delay at the expense of extra clock cycles for completing one modular multiplication. To overcome the weakness, a configurable CSA (CCSA), which could be one full-adder or two serial half-adders, is proposed to reduce the extra clock cycles for operand precomputation and format conversion by half. In addition, a mechanism that can detect and skip the unnecessary carry-save addition operations in the one-level CCSA architecture while maintaining the short critical path delay is developed. As a result, the extra clock cycles for operand precomputation and high throughput can be obtained. Experimental results show that the proposed Montgomery modular multiplier can achieve higher performance and significant area-time product improvement when compared with previous designs.

Index Terms: Carry Save Adder (CSA), Montgomery multiplication, Configurable CSA, precomputation, critical path delay, half adder

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37. DESIGN AND IMPLEMENTATION OF 40GHz HIGH RESOLUTION SET BASED VCRO FOR ISM BAND APPLICATIONS

D.Ajitha¹, M. Chandra Sekhar Reddy², Nagarjuna Telagam³ ¹Department of E.C.E, Sreenidhi Institute of Science and Technology, Hyderabad, India, ²Department of E.C.E, Sri Venkateswara College of Engineering, Kadapa, A.P, India, ³Department of EECE, GITAM University, Bangalore, Karnataka, India,

Abstract: The main aim of the paper was to design a low power VCRO with less area optimization using Single Electron transistors. This design requires nine differential amplifiers in which the last stage is feedbacked to input. Using SET technology, the frequency range of VCRO is increased up to 40GHz, and power dissipation is 20 microwatts and area utilized is 600 nano meter square. The 73% improvement in power consumption is observed in SET compared to CMOS.

Key words: Single Electron Transistor, Electric VLSI design tool, VCRO, power and area





38. A Survey of memristors and it's Applications [1] G L SumaLata, [2] Dr.Abhishek Kumar Shrivastava [1] JRF, [2] Associate Professor [1],[2] KL university, Hyderabad

[1] sumaprasadql@gmail.com,[2] abhishek@klh.edu.in

Abstract: In this paper, basic theory of the missing circuit element i.e., memristor which is formed by concatenation of two words memory and resistor, the facts which motivated like usage of these devices in Memory Processing Units (MPUs), neural networks and V - I characteristics have been discussed. The special characteristics due to which these devices became popular are also discussed. Comparison between different memristor models is done. The literature review and future scope covers almost each and every important step in the invention of memristors. The potential applications in various fields which made memristors very interesting are enlisted. The conclusions are drawn based on the literature.

Keywords: Memristor, MPU, neural networks

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39. Design and Analysis of High Beam forming MIMO Antenna for 5G Applications

Aylapogu. Pramod Kumar^{*}1, N.Suman¹, Y.V.Koteswararao²

^{1*} Department of Electronics and Communication Engineering, Vardhaman College of Engineering, Hyderabad, India

India

¹ Department of Electronics and Communication Engineering, VIGNAN'S deemed to be University, Guntur, India

² Department of Electronics and Communication Engineering, Research scholar, NIT Warangal, India pramodvce@gmail.com, nelaturi.suman4@gmail.com, yvkoteswararao@gmail.com.

Abstract: in upcoming days wireless communication products and electronic gadgets are becoming a necessity to human life. Communication systems need antennas that work with multiband and wide band with required parameters like polarization and gain. The main motto of this work is to produce high beam forming with the aid of mutual coupling among the four antenna elements in order to encourage enhanced transit capacity and empower the communication bandwidths at very large data rates for 5G Technology. In the view of mitigating the multipath fading with above mentioned principles. The designed antenna is developed a MIMO patch antenna with wide characteristics. It operates the frequency space from 2.2 GHz to 4.8 GHz. The antenna is developed with FR4 material with a dielectric consistent of 4.4, loss tangent of 0.02 and a density of 1.6mm. The recommended design has 4 monopole antennas. Each monopole antenna has a circular patch with radius of 5mm to avoiding interference. The simulation results s- parameter, VSWR, TARC, ECC, CCL and diversity gain are obtained and verified by using Ansys HFSS and Microwave CST studio.

Keywords: Beam forming, MIMO, Mutual Coupling, 5G applications.





40. Cloud Cover Avoidance in Satellite Systems

Arnold Johnson Fonseca, Department of Electronics and Telecommunication, Sardar Patel Institute of Technology, Mumbai, India, arnoldjohnson.fonseca@spit.ac.in.

Shreeram Narayanan, Department of Electronics and Telecommunication, Sardar Patel Institute of Technology, Mumbai, India, shreeram.narayanan@spit.ac.in.

Soham Jagtap, Department of Electronics and Telecommunication, Sardar Patel Institute of Technology, Mumbai, India, soham.jaqtap@spit.ac.in.

Dr. Reena Sonkusare, Department of Electronics and Telecommunication, Sardar Patel Institute of Technology, Mumbai, India, reena kumbhare@spit.ac.in.

Abstract: Cloud cover is one of the major problems in the acquisition of optical satellite remote sensing and has a negative impact on the efficiency of data scheduling. Along with data scheduling, the computational power required is falling short. Recent advances in a wide range of technologies have led to an explosion in the quantity of data. Object detection in remote sensing images has long been studied, but it remains challenging because of its diversity and complex backgrounds. In this paper, a cloud detection method based on Convolutional Neural Networks is proposed for remote sensing images. The classifying model uses a neural network where the underlying features are used to classify the image as useful or not. Results demonstrate that the proposed method outperforms other existing state of the art methods. Once classified, it will be transmitted from the satellite to the earth giving the researchers only convenient pictures to study. This will help to save a massive amount of computation, expense and time.

Index Terms: cloud cover, classification, convolutional neural network, satellite images

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41. Implementation of MIMO-OFDM System Using V-BLAST ZF and V-BLAST MMSE Detection

Algorithms

Syeda Sumayya Mujeeb¹, M Jyothsna²

¹MTech in Wireless Mobile Communication, ETE Department, ²Assistant Professor, ETE Department 1summisyedamk95@gmail.com, 2mjyothsnagoud@gmail.com

G Narayanamma Institute of Technology and Science (for women), Hyderabad, Telangana, India

Abstract: MIMO-OFDM system improves the performance of transmitted signal by reducing the signal fading rate. MIMO is applied on narrow banded frequency flat subchannels produced by OFDM. The multiple antennas i.e. MIMO, transmits same data at the same time so that the data is not faded simultaneously thereby improving the SNR and BER of the system.

MIMO-OFDM using VBLAST algorithm is further implemented to enhance the spectral efficiency, bandwidth with spatial diversity and also BER performance. Zero Forcing (ZF) and Minimum Mean Square Error (MMSE) detection schemes are used to minimize the effect of channel estimation errors. After applying the VBLAST algorithm BER of both the detection schemes is compared. MIMO-OFDM using VBLAST-MMSE gives better BER performance.

Keywords: Multiple Input Multiple Output - Orthogonal Frequency Division Multiplexing (MIMO-OFDM), Zero Forcing (ZF), Minimum Mean Square Error (MMSE), Vertical Bell Labs Layered Space Time (V-BLAST). Copy Rights reserved@ ACCESS-2020





42. SKIN CANCER DETECTION USING DERMOSCOPE IMAGES Shilpa Saravanan', Heshma.B', Ashma Shanofer.A.V¹, R.Vanithamani² UG Students¹, Professor²

Department of Biomedical Instrumentation Engineering Avinashilingam Institute for Home Science & Higher Education for Women

shilpasaravanan1299@gmail.com1, heshma3199@gmail.com1, shanoferwahab@gmail.com1, vanithamani_bmie@gmail.com2

Abstract: Skin cancer is an abnormal growth of skin cells which develops on the body when exposed to the sunlight. Most of the skin cancers are curable when detected at early stage. Early diagnosis can help to treat the patients effectively. Formal method for diagnosing skin cancer is biopsy. In this paper, skin cancer detection system is developed using LabVIEW. The proposed method uses vision development module in LabVIEW to process dermoscope images. Preprocessing steps such as median filtering and contrast stretching is performed for noise removal and image enhancement. Threshold based segmentation is adopted to segment the affected area. Features such as Asymmetry, Border, Color and Diameter (ABCD) are extracted. The presence of cancer is detected using ABCD rule.

Keywords: Skin Cancer, Dermoscope Image, Asymmetry, Border, Color, Diameter.

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43. Thermal Fluid Flow Transport Phenomena in Strongly Heated Parallel Channel Shuichi Torii Department of Mechanical and Mathematical Engineering Kumamoto University Kumamoto, Japan torii@mech.kumamoto-u.ac.jp

Abstract: Numerical analysis is performed on thermal fluid flow transport phenomena in parallel channel under uniform heating from both side-walls. As the numerical methods, the two-equation heat-transfer and k- ε turbulence models are employed to determine turbulent heat flux and Reynolds stress, respectively. It is found that (i) a substantial deterioration in heat transfer performance, i.e., laminarization occurs in the channel which is strongly heated from both walls, and (ii) during the laminarization process, both the velocity and temperature gradients in the vicinity of the heated walls decrease along the flow, resulting in a substantial attenuation in both the turbulent kinetic energy and the temperature variance over the entire channel cross section.

Keywords: CFD, laminarization, two-dimensional channel, k-12 turbulence model, two-equation heat-transfer model, turbulent heat flux, and Reynolds stress





44. Smart Jacket for Health Monitoring Using LabVIEW Dr. K. Bharath Kumar, Assoc. Professor, ECE Dept, kammarabharathkumar@gmail.com Dr. Ch. Sudha Mani, Assoc. Professor, ECE Dept, sudhamanich@gmail.com Mohd Abdul Naqi, Asst. Professor, ECE Dept, mohdabdulnaqi@gmail.com Sireesha Pendem, Assoc. Professor, ECE Dept, sirisha5716@gmail.com

This article describes the designing and applications of smart jacket equipped with health Abstract: monitoring sensors using lab view software tool. In today's life it is very essential to have quality of improvement in health care at home and at hospital for patients and society at large. As many innovations are going on in micro technologies, telecommunication, low-power design, new textiles, and flexible sensors new user friendly devices got developed which will be giving comfort to patients. As 90% of clothes and textiles are in direct contact with the skin surface, smart sensors and smart clothes with non invasive sensors this will be a great solution for home-based as well as ambulatory health monitoring. These systems can provide a safe and comfortable environment for home healthcare, illness prevention, pharmaceuticals to citizens, data analysis and wireless transmission in order to collect, save, analyze the wireless transmit physiological signals such as human body temperature and pulse rate and Blood Pressure. As we know that these health monitoring sensors can be operated by using Arduino or Raspberry pi tool with a specific computer programming dumped in it which makes the whole process complex. To overcome the complexity and the many limitations as per design and specifications of these tools Lab VIEW is used. It is a tool that uses graphical programming languages. These are coded by selecting objects, connecting them and adding functionality. The coding or building a circuit in Lab VIEW in one operating system can work in another operating system which makes it reliable. Keywords: Heart Rate Sensor, BMP 180 Sensor, NEO 6m GPS Module, MyRIO and Lab VIEW.

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45. Reflexive Engine to Lock the System for Driving While Intoxicated Simulation by Using Lab VIEW

Dr. K. Bharath Kumar, Assoc. Professor, ECE Dept, kammarabharathkumar@gmail.com Dr. Ch. Sudha Mani, Assoc. Professor, ECE Dept, sudhamanich@gmail.com Mohd Abdul Naqi, Asst. Professor, ECE Dept, mohdabdulnaqi@gmail.com Sireesha Pendem, Assoc. Professor, ECE Dept, sirisha5716@gmail.com

Abstract: Drunken driving is a major issue due to which many road accidents are occurring. To overcome this many researches are going on and we also tried to develop a reflexive engine locking system In this paper we have developed a system through which when a person tries to drive by consuming alcohol will experience a automatic engine lock. By implementing this we can save lives of passengers as well as pedestrians and other people too. Today situation is worsening like for every thirty minutes accidents are happening and taking lives of many innocent people. To avoid this we are trying to implement a prototype for alcohol detection for drunk and drive. Based on threshold set, alcohol breath analyzer sense level of alcohol consumed by the driver and if it crosses the limit set it will automatically locks the engine. Due to drowsiness of driver and consumption of alcohol more number of accidents are happening. Because of this more lives are at risk. This design implements a model which saves lives of people inside and outside the vehicle.

Keywords: MQ-3 Alcohol sensor, Arduino Uno ATmega328, LCD, MyRIO and LabVIEW.





46. An Energy Efficient Reporting Scheme for Cognitive Radio Networks Chilakala Sudhamani, Department of ECE, e-mail: sudhamani.ece@cmrtc.ac.in Ashutosh Saxena, Department of CSE, e-mail: saxenaaj@gmail.com V Aswini, Department of ECE, e-mail: aswinivunnava@gmail.com CMR Technical Campus, Hyderabad - 501401, TS

Abstract: Cooperative spectrum sensing in cognitive radio network consumes a large amount of energy during spectrum sensing and reporting. An energy efficient reporting scheme named as reduced energy consumption scheme for reporting has been proposed in this paper to reduce the energy consumption. In this scheme, all secondary users will sense the channel and make a local decision about the spectrum. All these local decisions are forwarded to a common node known as fusion center. It will count the presence or absence of the primary user based on the secondary users local decisions. Whenever the counters count is greater than or equal to the threshold then the fusion center will send a stop reporting feedback signal to the secondary users. In this way the energy consumption is bring down by diminishing the reporting secondary users and the energy efficiency is improved. The simulation and numerical results show a notable improvement in the energy efficiency of a reduced spectrum sensing scheme compared to the conventional spectrum sensing method.

Index Terms: Cognitive radio, Cooper

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47. Improved Detection Performance of Energy Detection based Spectrum Sensing in Cognitive Radio Networks

Chilakala Sudhamani, Department of ECE, e-mail: sudhamani.ece@cmrtc.ac.in Ashutosh Saxena, Department of CSE, e-mail: saxenaaj@gmail.com V Aswini, Department of ECE, e-mail: aswinivunnava@gmail.com CMR Technical Campus, Hyderabad - 501401, TS

Abstract: In cognitive radio networks, spectrum sensing plays an important role in identifying the underutilized spectrum bands. Conventional spectrum sensing using energy detection method uses single detection threshold, which degrades the detection performance. Therefore, double detection threshold has been proposed for spectrum sensing in the literature to improve the detection performance, but the performance depends on the region between two thresholds termed as confusion state. Hence to improve the overall detection performance new resensing scheme has been proposed in this paper by varying the difference between thresholds by a constant factor K times. The proposed method improves the detection performance compared to the single threshold method. Simulation results show that the proposed method operates better than the single threshold energy detection method.

Index Terms: Cognitive radio, Energy detection, Detection threshold, Spectrum sensing. Copy Rights reserved@ ACCESS-2020





48. A NOVEL APPROACH FOR DETECTING ABNORMALITY IN EJECTION FRACTION USING TRANSTHORACIC ECHOCARDIOGRAPHY WITH DEEP LEARNING

Prattay Guha Sarkar, Assistant Professor, RIMS, Ranchi, India, Prattay_2904@yahoo.com Vishal Chandra, Research Scholar, UMU, Ranchi, India, vcvishalchandra@gmail.com

Abstract: Cardiovascular diseases (CVD) are the prime cause of mortality in people worldwide. Mortality in CVD has been strongly linked to Ejection Fraction (EF) in various studies1. Left ventricular ejection fraction (LVEF) is the central measure of left ventricular systolic function. LVEF is the fraction of chamber volume ejected in systole (stroke volume) in relation to the volume of the blood in the ventricle at the end of diastole (end-diastolic volume)₂. Evaluation of left ventricular systolic function by left ventricle ejection fraction (EF) using Transthoracic echocardiography is usually a first line investigation. Determination of Ejection fraction (EF) is done most commonly by a semi-automatic process in which echocardiographer segments the left ventricle in both systolic and diastolic frames to generate systolic and diastolic chamber dimensions. The whole process in time consuming and highly dependent on operator experience causing a lot of inter-observer and intra-observer variations. Our goal is to develop algorithms so as to reduce the time consumed during whole process and make it more reliable and reproducible. We have used M-Mode of Left ventricle in PLAX view to measure chamber dimensions and calculate EF by Teich method. EF >50% has been categorized as normal ejection fraction. EF < 50% has been categorized as reduced ejection fraction and LV systolic dysfunction. In this research we have used fine-tuned ResNet 50 and trained it with 200 cases. We observed an accuracy of 98% and a F1 score of 77% for reduced EF (<50%) and 77% for normal EF (>50%). Although this is a small dataset, it shows that deep learning algorithms can be applied to medical imaging. ResNet50 is a preferred choice in terms of accuracy. This research will serve as a stepping stone for future research and will determine other cardiac matrices.

Keywords: Echocardiography, CNNs, Ejection fraction, Deep learning.

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49. COMPREHENSIVE STUDY OF PATHOLOGY IMAGE ANALYSIS USING DEEP LEARNING ALGORITHM

Machunoori Mounica, ECE, GRIET, Hyderabad, India, Email: mounica432@gmail.com R.Shanmuka Shalini, CSE, GRIET, Hyderabad, India , Email: shannu.sneha@gmail.com Pericharla Sowmya, CSE, GRIET, Hyderabad, India., Email: pericharla.sowmya@gmail.com

Abstract: Image analysis must be thoroughly analyzed to find computer-assisted medical assistance. Researchers sought to automate the analysis of image pathology using the segmentation process. Therefore, many researchers have proposed an image pathology classification using different deep learning methods. A comprehensive survey has been carried out to identify the various research articles available in the literature on all types of image pathology and analyze the main contributions and their benefits. Here, a total of fifteen documents are analyzed. In addition, this study provides a detailed idea of how to improve the segmentation performance of the image pathology classification.

Keywords: - Deep learning, images pathology, classification, segmentation

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50. A Wrapper based Feature Selection using Grey Wolf Optimization for Botnet Attack Detection ¹ Ravi Kiran Varma P¹, Muni Rohit Rishi, MVGR College of Engineering, Vizianagaram, AP, India Satya Reddy Mallidi, Sri Vasavi Engineering College, Tadepalligudem, AP, India

Abstract: A botnet is a malicious software that is controlled by a master and used to compromise a distributed set of systems, in turn targeting a victim. Powerful attacks like Distributed Denial of Service (DDoS) can be triggered using a botnet. With the rapid growth of the Internet of Things (IoT) and its omnipresence, the vulnerable IoT devices are also under threat of being a victim or a zombie. Machine Learning tools can perform a crucial role in botnet detection by traffic feature analysis. The dataset is created by analyzing command and control (C&C) botnet channel's HTTP traffic features, and network traffic session-based features. To optimize the listed botnet data traffic features, Grey Wolf Optimization (GWO), in a wrapper model, is used to search the useful features without affecting the classification accuracy. The output of the research finds the proposed GWO wrapper to be an excellent choice for feature reduction for botnet attack detection.

Keywords: Botnet, botnet detection, network traffic analysis, feature selection, Grey Wolf Optimization, GWO, feature reduction.

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51. Enhancement and Segmentation of Medical Images using AGCWD and ORACM Chenigaram Kalyani¹, Kama Ramudu² and Ganta Raghotham Reddy³ ¹Assistant Professor, Department of Electronics and Communication Engineering, Kamala Institute of Technology and Science, Singapur, Huzurabad, Telangana, India. ²Assistant Professor, ³Professor & Head, Department of Electronics and Communication Engineering, Kakatiya Institute of Technology and Science, Warangal, Telangana, 506015, India.

Emails: kalyanichinegaram@gmail.com, ramudukama@gmail.com, grreceg@gmail.com

Abstract- Images are obtained in the real world in low contrast, and are inappropriate for human eyes to read medical images. Enhancement and segmentation have an important role to play in digital image processing, pattern recognition and computer vision. This paper proposes an effective method of changing histograms and improving contrast in digital images. Segmentation is done on AGCWD enhanced images. Histogram equalization is an important technique for contrast enhancement. Nevertheless, modern Histogram Equalization (HE) typically results in unnecessary contrast enhancement, which in turn gives an unnatural appearance to the processed image and produces visual artifacts. We present an automated transformation technique that helps boost dimmed image brightness by gamma correction and weighted distribution, commonly known as Adaptive Gamma Correction Weighting Distribution- (AGCWD). The level of contrast enhancement can be modified using this technique; noise robustness, white / black stretching, and the protection of medium brightness can be easily integrated into the optimization process. Finally, a contrast enhancement algorithm with a low complexity is introduced. All the process of enhancement will be done during the process of pre-processing the image. Later, in post-processing, we introduce a specific level set method known as ORACM for better segmentation of an enhanced AGCWD image, and it is compared with the traditional level set method.

Keywords: Image Enhancement, Histogram Equalization, AGCWD Image Segmentation, ACM with SBGFRLS, ORACM Level Set Method.





52. Detection and Prognosis of Diabetes Based on Data Science Techniques Mohd Javeed Mehdi^{*}1, N Srinivasrao^{*}2, A Sireesha^{*}3

^{1,2,3}Asst. Prof., Dept. of ECE, GRIET, Hyderabad,

¹ mmjaveedk@gmail.com, ²nsrao.21@gmail.com, ³sireeshapadmaja@gmail.com

Abstract: Diabetes is such a complicated disease that it is not just chronic but damages the blood glucose processing system of human body also. This requires a regular medication. As per International Diabetes Federation, there were about 463 million patients diagnosed with diabetes in 2019 and the figure may reach 700 million by 2045 approximately. If diabetes is not noticed in time, it will result in fatal effect in a person by damaging the eyes, blood vessels, kidneys, nerves, and heart. To stop progress this illness to the said complication level, it must be timely detected. In this task, a neural network algorithm is developed combined with machine learning applications to detect the diabetes timely. A data sample was used for training the neural network based on the various classification algorithms which are K-Nearest Neighbours, Support Vector Machine, Decision Tree, Gradient Boost, Linear Regression, and Random Forest, and various implicit layers to detect the disease possibility in advance. Python programming language was used for developing the model. Different sets of test data were used to check the accuracy of different algorithms. Error percentages were reported for all the algorithms with different hidden layers, to choose the best algorithm with optimality of hidden layers which can be used for diabetic prognosis with less possible error.

Keywords: Diabetes, neural network algorithm, machine learning, K-Nearest Neighbours, Support Vector Machine, Decision Tree, Gradient Boost, Linear Regression, Random Forest, Diabetic Prognosis.

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53. Paddy Leaf Diseases Recognition and Classification using PCA and BFO-DNN Algorithm by Image

Processing

Aakrati Nigam, Research Scholar, Aakrati139@gmail.com Avdhesh Kumar Tiwari, Assistant Professor, Eravdhesh77@gmail.com Akhilesh Pandey, Assistant Professor, Akhileshmtech10@gmail.com Department of CSE, Kanpur Institute of Technology, Kanpur,

Abstract: Currently, agriculture has become the most significant approach than it has been used before a few years back, when the plants are used for feeding the human and flora and fauna. Presently, the plants have been used to create the electricity and other type of the power to enhance the living situations of the social beings. Due to this, it is required for the suitable care of the plants to acquire the maximum advantage. The main region that required main consideration is the cutting plant leaves diseases. A number of the diseases affect the leaves that may cause maximum destruction to different economic and social aspect. It may also cause high environmental losses. In the proposed system, study the different leaf infections using detection and classification technique in image processing. Initially, various paddy leaves acquire using digital pictures. After that, RGB model converted into the HSV model for resizing the picture using k mean clustering with image segmentation. Then, the specific features are extracted using the PCA algorithm. Moreover, the feature extraction and BFO-DNN method implemented for classification of the paddy leaf diseases. This classification method is used to improve the detection rate and reduce the entropy loss. It is highly efficient and accurate to detect or recognize the disease image with different number of categories (Bacteria light, sheath rot, Brown spot and Normal etc.). Experimental analysis is done to calculate the performance metric like as accuracy, TPR, TNR, FDR, Cross Entropy and FPR. Then, the comparative analysis of the existing parameters compared to the current parameters. The proposed system performance value of accuracy is 98% with hybrid BFOA-DNN, accuracy, value is 97 and DNN 93.50 percentage. The research system performance value of Cross Entropy Loss is 0.0011 with hybrid BFOA-DNN, Entropy Loss value is 0.0100 and DNN 0.01700 per cent.

Keywords: Deep Neural Network; Paddy Leave Disease Detection System; BFOA; PCA (Principle Component Analysis).





54. Computer Aided Breast Cancer Detection using Ultrasound Images S. Pavithra 1, R.Vanithamani2, Judith Justin3 1PG Student, 2Professor, 3Professor & Head Department of Biomedical Instrumentation Engineering

Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, Tamil Nadu, India Abstract: Breast cancer is the second prevalent type of cancer among women. Breast Ultrasound (BUS) imaging is one of the most frequently used diagnostic tools to detect and classify abnormalities in the breast. To improve the diagnostic accuracy, Computer Aided Diagnosis (CAD) system is helpful for breast cancer detection and classification. Normally, a CAD system consists of four stages: pre-processing, segmentation, feature extraction, and classification. In this chapter, the pre-processing step includes speckle noise removal using Speckle Reducing Anisotropic Diffusion (SRAD). The goal of segmentation is to locate the Region of Interest (ROI) and Active contour-based segmentation is used in this work. The texture features are extracted and fed to a classifier to categorize the images as Normal, Benign and Malignant. In this work three classifiers namely K-Nearest Neighbors (KNN) algorithm, Decision tree algorithm and Random Forest classifier are used and the performance is compared based on the accuracy of classification

Keywords: Breast Ultrasound, Computer Aided Diagnosis, Random Forest Classifier

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55. An Exploratory Study on Image Edge Detection Quality Evaluation Using Various Algorithm Pericharla Sowmya, CSE, GRIET, Hyderabad, India., Email: pericharla.sowmya@gmail.com R. Shanmuka Shalini, CSE, GRIET, Hyderabad, India , Email: shannu.sneha@gmail.com Machunoori Mounica, ECE, GRIET, Hyderabad, India, Email: mounica432@gmail.com

Abstract: The edges of the image play an important role in digital image processing and artificial vision. Frames reduce the amount of data, extract useful information from the image and preserve the essential structural properties of the input image. These edges can also be used to identify objects and facial expressions. Recently there have been various methods of evaluating the detection of the edges of the image. Many measure the similarity of a reference images. The researchers tried to automate the detecting edge process using various images. As a result, numerous studies have been proposed to identify the images of various edge operators using various artificial intelligence techniques and meta-heuristic algorithms. A detailed survey was conducted to identify the various research articles available in the literature on all aspects of peripheral imaging and to analyze the main contributions and their benefits. Here, totally fifteen articles are fully discussed here. In addition, this study provides a detailed understanding of edge operator -based digital imaging.

Keywords: Images, edge detector, artificial intelligence techniques, sphere image, Lena image





56. Disease Prediction and Diagnosis System in Cloud Based IoT: A Review on Deep Learning Techniques

Ch Suneetha K, CSE, GRIET, suneetha548@gmail.com Vijaya Kumar Vadladi, ECE, GRIET, vijay20052009@gmail.com

Gudapalli Karuna, CSE, DRK Institute of Science and Technology, gkaruna93@gmail.com, Abstract: In recent years, the Internet of Things (IoT) -based mobile healthcare applications have highlighted multi-dimensional events and organizations in realtime. These apps provide a platform for millions of people to continuously receive health updates for a more beneficial lifestyle. Since the launch of IoT devices in the healthcare industry, the core components of these applications have been refined to this point. IoT devices generate huge amounts of data in healthcare. Innovation in cloud computing is used to manage large amounts of data and usability. In this scenario, cloud-based applications play an important role in this rapidly changing world. Experts in this field have sought to robotize the pathway to identify and diagnose diseases that could potentially exploit IT innovation. As a result, various tests have proposed a cloud-based IoT prediction and diagnostic framework for diseases that use a secure and different machine learning algorithm. Extensive studies were undertaken to obtain a variety of research articles from all disciplines of heart disease and to examine important commitments and their focal points. Here, the complete twelve papers are divided. In addition, this survey provides a detailed reflection on the disease prognosis and diagnostic system.

Keywords: m-health, heart disease, machine learning, Internet of Things (IoT), could computing.

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57. Enhanced Weighted Sum Back Propagation Neural Network for Leaf Disease Classification *P. Lohith Kumar', K. Vinay Kumar Goud*², *G. Vasanth Kumar*³, *Shijin Kumar P.S*⁴ ^{1,2,3,4} Department of ECE, Marri Laxman Reddy Institute of Technology and Management, Hyderabad, Telangana, India, shijinkumarps@yahoo.com

Abstract: In an agricultural country like India, farmers have facilities to culti-vate different crops. However, cultivation of the crops for better yield and quality production can be made easy with the support of technology. Image processing plays a vital role in detecting a plant disease and will provide a sup-port to the research. In reality, we can find fast, automatic, cheap and accurate solutions by using image processing techniques. This work provides a signifi-cant and an efficient system for the classification of leaf diseases. During seg-mentation, the infected part of the leaf is recognized by using Otsu's threshold method. The extraction of features, from the segmented image is performed us-ing Gray Level Co-occurrence Matrix (GLCM). The features hence derived are used as the input to the classifier. Enhanced Weighted Sum Back Propagation (EWSBP) Algorithm is used in the Multilayer Perceptron Neural Network (MPNN) for classification. This classifier provides better performance com-pared to other leaf disease classification methods.

Keywords: Leaf Disease Classification, Multilayer Perceptron, Enhanced Weighted Sum Back Propagation , GLCM.

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58. A Novel Secure and High-Entropy Hardware Password Manager Projjal Gupta, Dr. Diwakar R. Marur, Hashika Kalisetty and Akanksha Khanna ECE, SRM Institute of Science and Technology, Kattankulathur, India akankshadkhannaıı@gmail.com

Abstract: With the advent of internet technology, a large number of applications and services that make use of critical user data have emerged. Majority of the users tend to re-use the same passwords for different accounts which leads to many cyberattacks causing loss of critical data and finances. This research paper aims to design and develop a viable and cost-effective prototype to protect sensitive data by the means of storing the credentials in a secure hardware password manager accessible only by the owner with a randomized password generator to secure the user credentials against any brute-forcing or dictionary attacks. This paper discusses performance of various encryption algorithms in constrained devices so as to make a secure product. *Index Terms*—*Password Manager, Encryption, AES-CBC, ChaCha2o, Data Security, Offline Security.*

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59. Performance Enhancement of MIMO OFDM using FEC Codes

G. Krishna Reddyı, Adelli Tapaswi2, G. Merlin Sheeba3

1Assoc. Professor, ETE dept, G. Narayanamma Institute of Technology & Science, Hyderabad, India,

gkr999gkr@gmail.com

2M.Tech, Wireless and Mobile Communications, G. Narayanamma Institute of Technology & Science, Hyderabad, India, adellitapaswi@gmail.com

3Assoc.prof, School of EEE, Sathyabama institute of science and Technology, Chennai, India

Abstract: In wireless communication, the transmitted messages are added with noise. The presence of noise and signal fading develop error messages in the channels. To overcome this problem one has to use forward error-correcting codes (FEC). FEC codes add the redundant bits at the transmitter side such that it can detect the error and correct error present in the channel medium. In this paper, we use two codes; they are convolution codes and Turbo codes. In this paper, we use the MIMO-OFDM system that is the concatenation of both the "Multiple Input Multiple Output" (MIMO) systems and the Orthogonal Frequency Division Multiplexing (OFDM) system. To reduce interference and Increase the data rate OFDM system is used. To improve the performance of the OFDM system we use multiple antennas at a transmitter and a receiver side (MIMO) for reliable transmission. The forward error correction plays an important role in enhancing the performance of the MIMO-OFDM systems. The performance of a MIMO-OFDM system with the Convolutional and Turbo codes is evaluated based on Bit Error Rate (BER). In this paper Binary Phase Shift Keying (BPSK) modulation is applied and transmitted over Rayleigh channel. BER performance is obtained using MATLAB 19b. By comparing both coding techniques, it is determined that the Turbo code outperforms Convolutional code.

Keywords: FEC; *Convolutional codes*; *Turbo Code*; *BER*; *MIMO-OFDM*; *Rayleigh Fading Channel*. Copy Rights reserved@ ACCESS-2020





60. Intelligent Dustbin: A Strategic Plan for Smart Cities Amit Sinha, Kanika Gupta, Aatif Jamshed and Rajneesh Kumar Singh ABES Engineering College Ghaziabad, Uttar Pradesh, India

Abstract: Wastebasket or Dustbin is everywhere a common and essential necessity. The trash is also collected regardless of the improper handling of the waste in the Wastebasket. Here we find a modern concept for municipal dustbins, which sets the municipality core to clean dustbins instantly. The focus is to create and build a prototype for an automated open dustbin that will open the deck automatically when detecting people who want to throw their trash off. To stop the decreasing scent around the bin harmless liquid is used that will spray the all-around the corners in wastebasket. The aim of this paper is also to promote more study into waste management issues through IoT Based waste management using smart dustbin.

Keywords: GPS Sensor, IoT, Smart City, Smart Bin, Trash Management



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61. DNN Based Distributed Sequential Uplink Processing in Cell-Free Massive MIMIO based on Radio stripes

> Aman Kumar Mishra, akmchennai2018@gmail.com Vijayakumar P, vijayofsrm@gmail.com Electronics and Communication, SRMIST, Chengalpattu, India

Abstract: Cell-free Massive MIMO (mMIMO) which brings the best of two worlds: firstly, macro-diversity from large numbers of distributed access points (APs) and secondly interference cancellation from cellular Massive MIMO is envisioned to be next-generation wireless technology for beyond 5G. However, its practical deployment is extremely challenging due to large numbers of long cables (economic perspective) and network synchronization. Cell-Free mMIMO system based on Radio Stripe (CFMMRS) network is one such architecture of Cell-free Massive MIMO suitable for practical deployment. This work proposes DNN Based Distributed Sequential Uplink Processing (DBDSUP) for detecting symbols in the uplink of Cell-Free mMIMO system based on Radio Stripe (CFMMRS) network that proposed algorithm outperform traditional iterative SIC based detection method.

Keywords: *Cell-free mMIMO based on Radio Strip, DNN Based Distributed Sequential Uplink Processing.* Copy Rights reserved@ ACCESS-2020





62. CUSTOMIZED SMART GLASSES FOR NEEDY BLIND PEOPLE

Mrs R.Abirami, Assistant Professor and Haarini S, Undergraduate Student, Department of Information Technology Rajalakshmi Institute of Technology Chennai – 600124 P Hari Prasanth, Undergraduate Student, Department of Electrical and Electronics Engineering RVS Padmavathy College of Engineering and Technology Chennai - 600066

Abstract: Visually challenged individuals are one of the most concerned people in the society in terms of independence and confidence. There is a class of needy blind people who are unable to pay for the technical devices designed for them. A personalized smart device designed using deep learning technologies will be of greater help to them. A brief discussion was made with them to make the design of this device more user specific. Requirements gathered from this meeting are processed using deep learning methods and are composed into a smart glass using Raspberry pi. This glass is customized for every user such that it detects presence of known people around them and also does priority specific object detection. The compact, stand alone and economically efficient design of this product is welcomed by the needy blind people with great enthusiasm. This product will thus effectively increase their morale and ability to roam outdoors notably. *Keywords: Visually challenged, Smart glass, Raspberry pi, Deep learning, Personalized*

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63. GAUSSIAN MIXTURE MODELLING COMPRESSION TECHNIQUE FOR MULTIVIEW VIDEO AND VIRTUAL VIEW SYNTHESIS FOR FREE VIEWPOINT VIDEO

Sravanthi Chutke, Research scholar, Sravanthi.praveen2012@gmail.com Dr. N.M. Nandhitha, Dean, School of Electrical and Electronics Engineering Praveen Kumar Lendale, Research scholar, Praveenkumar.lendale@gmail.com Sathyabama University

Abstract: High standard virtual views should be integrated from the adjoining available views in order to produce greater realistic 3D experience for users with the help of free viewpoint video FVV and Multiview video coding MVC. The present methods like view synthesis methods experience providing a lower quality as a result of holes produced by blockage and rounding the integer error by wrapping. They make use of temporal and spatial correlation in the depth maps in order to reduce holes in particular virtual view. Because of less similarity in the texture images and depth maps they experience the degradation of the quality in the surrounding and foreground regions. We use different models in Gaussian Mixture Modelling to distinct the foreground and the background pixels and to overwhelm the limitations of the existing techniques. using the method of adaptive weighted average of intensities of pixels with the help of similar GMM models the lost pixels after wrapping are retrieved. There is variation of the weights with respect to time for serving the changes caused by vital background and movement of the kinetic objects for view synthesis. On condition that presentation of intensities of pixels drops consequentially the proposed method introduces an adaptive approach for resetting GMM modelling. Based on the executed outcomes the presented technique is proved to produce 5.39 to 6.59DB enhanced PSNR as compared to similar methods. To check the viability of presented view synthesis method we make use of it as additional cited frame in motion estimation for MVC. The executed outcomes of the presented method prove to boost the PSNR by 3.14 to 5.12 DB with traditional 3 cited frames





64. Do Tourists Behave in a Sustainable Manner at Destinations? Empirical Evidence from Munnar Elza John, Amrita School of Business, Amrita Viswa Vidyapeetham, Coimbatore, Tamil Nadu,

elzajohn6@gmail.com

Abstract: Recent years witnessed a growing concern to save the environment, while participating in tourism. However, the extend literature lacks sufficient testing of whether tourists behave in a sustainable manner at destinations. The current study addresses this gap through identifying first five potential dimensions of tourist's behaviour in a sustainable manner: enviro-expert behaviour, eco-friendly behaviour, destination specific behaviour, economically favourable behaviour and environmental learning behaviour. The corresponding measurement items are collated from literature and pre-testing. Subsequently, 224 completed responses were obtained from tourists that have visited Munnar and a Confirmatory Factor Analysis were conducted to validate the dimensions. Further, factorial validity and measurement as well as measurement invariance were also executed to ensure the stability of the scale measuring sustainable tourist behaviour. *Keywords: tourism, behaviour, sustainability, Munnar, invariance, factorial validity*

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65. An Approach to Text Analytics and Text Mining in Multilingual Natural Language Processing *Arjumand Masood Khan*¹, Dr. Khan Rahat Afreen²,

¹Department of Computer Science and Engineering, Government college of Engineering Aurangabad, Maharashtra, India, arjumand21.khan@gmail.com

²Department of Computer Science and Engineering, Deogiri Institute Management of Studies Aurangabad, Maharashtra, India, 2siddiqui.rahat@gmail.com

Abstract: Natural language processing (or Computational linguistic is becoming the state of art in today's world. It has evolved many years ago in past 1960's. The task of NLP is understanding the natural human utterances in terms of speech or text, taking as input and giving proper response or output. Text mining also called as Text Analytics uses Natural language processing to transform unstructured corpus into standard and normalised documents or databases for further analysis by applying Artificial intelligence techniques and Machine learning algorithms.

Keywords: Natural language processing, Text Analytics, Text Mining, Corpus, Multilingual Copy Rights reserved@ ACCESS-2020





66. Key Point Oriented Shape Features and SVM Classifier for Content Based Image Retrieval Shijin Kumar P.S¹, Naluguru Udaya Kumar², A. Ushasree³, G.L. Sumalata⁴

^{1,2}Department of Electronics and Communication Engineering, Marri Laxman Reddy Institute of Technology and Management, Hyderabad, Telangana, India

^{3,4}Department of Electronics and Communication Engineering, Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad, Telangana, India

shijinkumarps@yahoo.com

Abstract: As personal digital libraries as well as automatically acquired image collections, traditional text and metadata based approaches for image retrieval are not sufficient. Commonly, these methods lack detailed descriptions that could be used for searching the required image. In digital libraries, content based image retrieval (CBIR) methods are required to support better image search. A highly robust and efficient shape descriptor based CBIR model has been proposed in this work. Canny edge detection algorithm is employed to identify strong key points on the edges. For key point set formation, the generalized distance transform scheme has been used. Combination of shape and key point identification are used to make proposed CBIR system more robust. Extracted features are fed to Support Vector Machine (SVM) classifier. For retrieval we used similarity matching using Euclidean distance metric. The proposed model provides superior performance while comparing with existing retrieval models.

Keywords: Content Based Image Retrieval, Shape Features, Support Vector Machine, Euclidean Distance, Key Point Identification.

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67. REVERSIBLE WATERMARKING USING ADAPTIVE EDGE SENSING INTERPOLATION

Reena Thomas¹ and Sucharitha M²

¹Research Scholar, Department of Electronics and Communication Engineering, Noorul Islam Centre for Higher Education, Kumaracoil, Tamilnadu, India

²Professor, Department of Electronics and Communication Engineering, Malla Reddy College of Engineering, Hyderabad, Telangana, India

E-Mail: reenaresearch@gmail.com

Abstract: Digital watermarking is an important method employed to conserve the copyright ownership of digital images. The watermarked image is transmitted and the owner of image can confirm ownership of the digital image by extracting the embedded watermark. Reversible watermarking provides more protection to the digital images. This is applicable for data authentication, copyright protection and medical field and so on. In this work, reversible watermarking using Adaptive Edge Sensing Interpolation (AESI) is proposed. The proposed method can improve the embedding capacity in digital images to nearly 2bpp (bits per pixel) and extract the cover image without any damage.

Keywords: Digital Watermarking, Reversible Watermarking, Data Authentication, Interpolation. Copy Rights reserved@ ACCESS-2020





68. An Approach to Illegally Parked Vehicle Detection

Prachi Anil Joshi Department of Computer Science & Engineering Deogiri Institute of Engineering & Management Studies, Aurangabad, India, prachijoshi@dietms.org

Dr.R.A.Khan, Department of Computer Science & Engineering Deogiri Institute of Engineering & Management Studies,

Aurangabad, India, siddiqui.rahat@gmail.com

Abstract: Nowadays illegally parked vehicle is major concern faced in the metropolitan cities worldwide. Illegal parking of vehicles is the crucial reason for the massive traffic jam that can lead to air pollution, vehicle crashing, and the significant parking revenue loss for the city administration. An attempt is necessary to implement the system that detects the illegal vehicle parking by image processing & OCR technique. Designing a comprehensive pre-processing module for image enhancement and normalization, such as smoothing, noise reduction, etc. is needed. Pre-processed image segmentation is required for splitting an image into homogeneous entities like lines, numbers & characters. The extraction of some features from the image that should permit discrimination between different classes is part of feature extraction. Finally, classification rules on training sets & post-processing techniques can be used for getting accurate results.

Keywords: Illegally Parking, Vehicle detection, Number plate detection, Character recognition, Fine collection, Gaussian mixture model (GMM), Convolutional Neural Network (CNN)

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69. Extraction of Features in Abnormal Human Gait using Image Processing Techniques Mallikarjunaswamy M.S., Ranjana K.R. Sri Jayachamarajendra College of Engg JSS Science and Technology University Mysuru, India msm@sjce.ac.in

P. Praveen Dept of Electronics & Instrumentation JSS Academy of Technical Education Bengaluru, India ppraveen26@qmail.com

Chandrashekara S. Chanre Rheumatology & Immunology Center & Research Bengaluru, India

Abstract: Gait is pattern how a person walks, each and every individual have a unique gait. Just by observing the gait doctors can learn a lot about health of an individual as there are several health problems that manifest themselves in distinctive form of gait. Lower limbs are important part of human body that are involved in gait, along with the movement of lower limbs the posture of spine, neck, shoulder and upper limbs affect the gait of an individual. When these parts fail to operate in regular manner due to injuries or if there are any kinds of neuralgic, skeletal or muscular disorders which affects the normal gait of individual it leads to gait abnormalities. Therefore, to identify gait abnormalities it is important to study the features of gait. The existing methods are based on micro electromechanical sensors, retro-reflective tags and infrared cameras for motion capture. In this work the motion is captured using mobile camera and human Gait features are measured by marking tags on the silhouette. Features are extracted for normal and five different types of abnormal gaits namely spastic gait, scissors gait, steppage gait, waddling gait and propulsive gait. The frames of video are processed for background subtraction followed by silhouettes extraction. The extracted features are useful for analysis of gait in diseased individuals.

Keywords: gait, silhouette, image processing, gait features

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70. Bat Optimization Algorithm for Wrapper-based Feature Selection and Performance Improvement of Android Malware Detection

Ravi Kiran Varma P, Santosh Jhansi K, Pushpa Latha D MVGR College of Engineering, Vizianagaram, AP, India

Abstract: Android is the predominately utilized mobile operating system (OS) in the public. Typically users install applications (apps) over the android OS by browsing from the play store. Play store apps are regarded as benign. However, unknowingly users approach other than play store resources to fetch their required apps. This poses a threat to the security of the device, along with the safety of the person. The losses incurred are unimaginable that stretches to the extent of identity theft, financial loss, sensitive information loss, espionage, sabotage, cyber fraud, to mention a few. Permission attributes of the android apps come to the rescue in detecting malicious apps through machine learning (ML) programs. The drawback of present-day methods on android permission attributes analysis for malware detection is the "curse of dimensionality." Android apps evolve in hundreds per day, so as the permissions. Thousands of permission attributes are to be studied that becomes a bottleneck for efficient ML system for android malware detection. A bio-inspired Bat Optimization Algorithm for Wrapper-based Feature Selection (BOAWFS) is proposed in this paper and tested on the CICInvesAndMal2019 android malware dataset having 4,115 static permission features. Several experiments are run with five different wrapper classifiers and found that BOAWFS-DT outperformed with 95.92% accuracy and an 80% reduction of features.

Index Terms: Android malware detection, Bat Optimization Algorithm, Feature selection, feature reduction, machine learning.

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International Conference on ADVANCES IN COMMUNICATIONS, COMPUTING AND EMBEDDED SYSTEMS September 18 – 19, 2020 ISBN 13: 978-81-930222-9-0

71. Cognitive Radio Networks and Spectrum Sensing: A Review

Hariharan Murali* Dept. of Electronics and Telecomunications SVKM's NMIMS MPSTME Shirpur, India anandı3.hm@gmail.com

Preet Talajiya* Dept. of Electronics and Telecommunications SVKM's NMIMS MPSTME Shirpur, India talajiyapreet@gmail.com

Aniket Gangurde* Dept. of Electronics and Telecommunications SVKM's NMIMS MPSTME Shirpur, India aniket15gangurde@gmail.com

U Ragavendran Dept. of Electronics and Telecommunications. SVKM's NMIMS MPSTME Shirpur, India druragavendran@gmail.com

Abstract: The wireless spectrum demand for is at a constant rise in contrast to its scarcity. To help tackle this issue, the concept of Cognitive Radio Networks(CRN's) was first proposed in the late 90's. A CRN is an intelligent network that dynamically changes its characteristics through the process of Spectrum Sensing and adapts to the convenience of the environment it is in. This article presents a basic overview of what CRN's are. The major contributions of this paper lie in a comparative study of CRN's and Spectrum Sensing in recent years as well as its main challenges and applications. This review shall help current and new researchers in the field to look for future outlooks and give them a basic run-through of CRN's and Spectrum Sensing and their characteristics.

Keywords: Spectrum Sensing, Cognitive Radio Network, Spectrum Allocation, Wideband Sensing Copy Rights reserved@ ACCESS-2020





72. A review on the Applications of ultrasound in Food Processing Sowmya Natarajan, India sn1019@srmist.edu.in Vijayakumar Ponnusamy, India vijayakp@srmist.edu.in Department of Electronics and Communication Engg SRM Institute of Science and Technology Chennai.

Abstract: Ultrasound is composed of mechanical waves that emerge from molecular movements. It operates at high frequency approximately in the range of 20 kHz -1 MHZ, also these waves cannot be perceived by human ears. This mechanical wave has two major categories namely low intensity and high intensity waves which are playing important role in food processing. In particular, these waves emerges its processing in food industry to develop various applications. This review paper focuses on ultrasound major applications in food industry. Using the sound waves the evaluation process extended to the fruit quality determination, adulteration in the raw cow milk, oil grading, freezing, emulsification, thawing, dehydration, foreign body detection and more applications in estimating the properties of fruits and grains.

Keywords: Food processing, Ultrasound, Machine learning, Adulterant identification

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73. Contactless Attendance System using Siamese Neural Network based Face Recognition

Lizzie D'cruzı, J. Harirajkumar2

1Lecturer (SG), Electronics and Communication Engineering Department, Dr. B. R. Ambedkar Institute of Technology, Port Blair, Andaman & Nicobar Islands, India

2Associate Professor, Electronics and Communication Engineering Department, Sona College of Technology Salem, Tamil Nadu, India

ılizzieshajan@qmail.com

3harirajkumar.j@sonatech.ac.in

Abstract: one of the most important and fast growing biometrical technological advancement is face recognition, used for identification of the person without any human intervention. In the proposed work, one shot learning has been used on Siamese convolution neural network for face recognition and attendance of the employee is entered in the MySQL database. The advantage of one shot learning algorithm is that it requires single training set for similarity measure. Application Programmable interface used for uploading database is APACHE Web Server. Get well soon message is send to absent employees through Gmail using send mail transfer protocol. 12 images have been successfully tested and the system observed state-of –art performance with all face recognized correctly.

Keywords: one shot learning, Siamese convolution neural network, web server




74. Brain Tumor Detection by using Convolution Neural Network

Ayesha Samreen, Student B.E 4/4 VIII semester, ECE Department, Chaitanya Bharathi Institute of Technology, ayesha.samreen0504@gmail.com

Amtul Mohimin Taha, Student B.E 4/4 VIII semester, ECE Department, Chaitanya Bharathi Institute of Technology taha.mohomin@gmail.com

Yasa Vishwanath Reddy, Student B.E 4/4 VIII semester, ECE Department, Chaitanya Bharathi Institute of Technology yasavishwanath@gmail.com

P. Sathish, Assistant Professor, ECE Department, Chaitanya Bharathi Institute of Technology,

psathish_ece@gmail.com

Abstract: Nowadays, Biomedical technology plays a vital role in diagnosis and treatment of small to dangerous life-threatening diseases and one of the most life threatening disease is Brain Tumor, which is the mass growth of abnormal cells in brain. Early detection and treatment of it can save the human life by preventing the further growth of abnormal cells. Detection of it can be done by analysing the Magnetic Resonance Imaging (MRI) Scans. Accurate analysis of MRI Scans need to be done to detect the brain tumor and it can be achieved by using the algorithms of artificial neural networks, although human can detect manually but possibility to human errors is more and is time consuming. This paper proposes an effective algorithm model to predict brain tumor probability by using convolution neural networks. The algorithm includes image pre-processing in which noise is reduced using Gaussian filter and morphological operations. After that, images are normalized to scale fit. Batch normalization is added to the network to speed up the training. BRATS and Kaggle image dataset are used to train and evaluate the model to get maximised accuracy. Confusion matrix is used to evaluate the performance of the maximised model.

Keywords: Convolution Neural Network (CNN), TensorFlow, Keras, Brain tumor detection, Deep learning, Magnetic Resonance imaging (MRI)

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International Conference on ADVANCES IN COMMUNICATIONS, COMPUTING AND EMBEDDED SYSTEMS September 18 – 19, 2020 ISBN 13: 978-81-930222-9-0

75. Web based Recognition And Translation of American Sign Language with CNN and RNN Dhanashree Bendarkar¹, Pratiksha Somase¹, Preety Rebari¹, Renuka Paturkar¹, Arjumand Khan² Computer Science and Engineering Department, Government College of Engineering, Aurangabad

Abstract: Individuals with hearing hindrance utilize gesture based communication for correspondence. Generally hand movements are used by them to communicate among themselves. But there are certain limitations when they communicate with other people who cannot understand these hand movements. There is a need to have a mechanism that can act as a translator between these people to communicate. An automation system that can convert sign language to text and will make the interaction easier. As of late, numerous such frameworks for gesture based communication or dynamic gesture recognition. As sentences are generated using combinations of static and dynamic gestures , it would be simpler for hearing debilitated individuals if such computerization frameworks can detect both the static and dynamic motions together. We have proposed a design and architecture og American sign recognition with convolutional neural networks (CNN). This paper utilizes a pretrained VGG-16 architecture for static gesture recognition and spatiotemporal features were learnt with the help of a deep architecture. This deep architecture first learns 2D spatio temporal feature which are mapped using 3D convolutional neural networks(3DCNN) and bidirectional convolutional long-short-term-memory networks (ConvLSTM).

Keywords: ASL, CNN, 3DCNN, ConvLSTM





76. Designing of 64 K Bit SRAM Using Increased Substrate Bias 7T SRAM cell Surekha G, Associate Professor, Department of E.C.E, GRIET Hyderabad, India. yandamurisurekha@gmail.com Dr. Balaji N, Professor, Department of E.C.E, JNTUK Director of IQAC, JNTUK, India. prof.balaji.ece@gmail.com

Dr. Padma Sai Y Professor & Head Department of E.C.E, VNRVJIET Hyderabad, India. ypadmasai@gmail.com

Abstract: Power Consumption of a 64K bit SRAM using increased substrate bias 7T SRAM cell is computed using 90nm_CMOS Technology on Cadence_Virtuoso Tool. Major part of this work is reducing power consumption and it is obtained for 1K bit,2K bit,4K bit,16K bit,32K bit and 64K bit SRAM blocks. The outcome of the different SRAM blocks designed using 7T SRAM cell are compared with SRAM blocks designed using standard 6T SRAM cell in terms of power consumption. The experimental results show improved performance of increased substrate bias 7T SRAM Cell over 6T SRAM Cell at reduced power consumption.

Keywords: 6T SRAM, 7T SRAM, substrate bias, power consumption.

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77. RFID based locomotive identification real time record system on the excel sheet through plx-daq technique

Kamini Sharma, M. Tech Scholar, School of Engineering, Sanskriti University, Chhata, Mathura (U.P.), India, ks.kamini2015@gmail.com

Laxmi Goswami, Assistant Professor, Department of Electrical Engineering, Sanskriti University, Chhata, Mathura (U.P.), India, laxmigoswami.ee@sanskriti.edu.in

Abstract: Timing and accuracy plays an important part for any system. In the railway system, timing plays an important role. Accurate timings of trains are necessary for smooth functioning of trains such as when train passes signal or a station, accurate and reliable data needs to be recorded for passing correct information to passengers or the operators. If timing become irregular, it will affect other trains timing also. The train's arrival and departure timing records are maintained by station master along with the train number and train name. These records are maintained manually in the computer by station master or in paper record sheet.

For small stations, maintaining these records manually is easy but for big stations, it become cumbersome to maintain proper and accurate record due to arrival and departure of different trains simultaneously at the same time. In this paper, a system is proposed in which all the records for any train are maintained through RFID based system. With this method, all the data related to individual train is automatically saved on excel sheet date wise.

Keywords: Arduino Nano, PLX-DAQ, RFID card reader





78. Diagnosis of Skin Pathologies using Image Processing Techniques

Rashmi H, Mallikarjunaswamy M.S. JSS Science and Technology University Mysuru, India rashmirh2015@gmail.com, msm@sjce.ac.in

Dinesh R. Samsung Electro-Mechanics Bengaluru, India, dr.dineshr@gmail.com

Shailaja K. Sri Jayachamarajendra college of Engg, JSS Science and Technology University Mysuru, Karnataka, India kshaila_15@sjce.ac.in

Abstract: Skin diseases are hazardous and often contagious, especially melanoma, nevus, and acne. Early detection of these skin diseases can be helpful during curing. The major challenge in skin disease diagnosis is that it needs an expert dermatologist to classify these skin diseases. Error during classification of the disease by the doctors can lead to inappropriate medications to the patient. In this work a skin disease detection method with random forest classifier is developed. The designed model successfully classifies the infected images with reliable accuracy values. A deep neural network is used for feature extraction of the diseased skin. *Keywords*: *Skin diseases, Image processing, Machine learning, Classification*

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International Conference on ADVANCES IN COMMUNICATIONS, COMPUTING AND EMBEDDED SYSTEMS September 18 – 19, 2020 ISBN 13: 978-81-930222-9-0

79. Fashion Compatibility using Convolutional Neural Networks

Kayiram Kavitha, Associate Professor, Dept. of CSE, Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad, Telangana, kavitha.bits@gmail.com Pudu Pravalika, Dept of CSE, GRIET, Hyderabad, Telangana, pravalikapudu@gmail.com

Dr.R.V.S.Lalitha, Professor, Dept. of CSE, Adity College of Engineering and Technology, Kakinada, Andhra

Pradesh, rvslalitha@gmail.com

Kotti Sruthi, Dept of CSE, GRIET, Hyderabad, Telangana, kottesruthi599@gmail.com Abstract: The exponential growth in online shopping have increased the sales in apparel industry. The

Abstract: The exponential growth in online shopping have increased the sales in apparel industry. The underlying secret is the online fashion recommendation system, which gives the customer various suggestions on the outfit selection during online shopping. These days fashionable outfit is the first wish and being able to choose from a wide variety of apparel and accessory combination is trending. The customers attain satisfaction by browsing through a variety of recommended outfits along with their associated accessories during online shopping. In this paper, we develop a fashion compatibility system that suggests the user with the outfit and its associated accessories for given input text like a fashion designer suggestion. We address the problem of generating fashion compatible outfits and accessories using Convolutional Neural Networks (CNN). The fashion compatibility system investigates for the simplest technique to recommend fashion compatible products that helps the retailers to understand the sentiment analysis of the customers in order to extend their digital marketing and customer satisfaction. We have compared different feature extraction techniques like bag of words, TDF-IDF, word2vec model. The model we have used to train the dataset is VGG-16.

Keywords: Fashion Compatibility, Recommendation System, Convolutional Neural Networks, Sentiment Analysis.





80. Internet of Things for Smart Cities- Security Issues and Challenges

Mr. Abhishek Raghuvanshi, Department of Computer Science & Engineering, ahakal Institute of Technology, Ujjain, India

Dr. Umesh Kumar Singh, Director, Institute of Computer Science, Vikram University, Ujjain, India

Abstract: IoT makes the concept of smart cities worldwide possible. A typical smart city includes smart homes, smart energy management, smart wastewater management, smart transport, smart agriculture, smart environment, smart health, smart governance, etc. Apart from these IoT is also used in industries like- oil mining, gas mining, manufacturing units as well. IOT increase productivity, optimizes cost, optimizes human resource, predicts maintenance, and provides a lot of comfort to human life. Security concerns are increasing with increasingly heterogeneous devices and data processing. Security and privacy issues are the main reasons, which are preventing IoT to flourish. In this paper, we are presenting a review of major security issues present at perception layer, network layer and application layer of IoT architecture.

Keywords: Internet of Things, Smart City, Vulnerability, Threats, Security Challenges

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81. SURVEY ON CORONARY ARTERY DISEASE USING DEEP LEARNING

M JayaSree, Research Scholar, jayasree.kaluvoju@gmail.com Dr L Koteswara Rao, Head of the Department, koteswararao@klh.edu.in Department of Electronics and Communication Engineering, KL University, Hyderabad.

Abstract: Advances in biological and medical technologies have been providing us explosive volumes of biological and physiological data, such as medical images, electroencephalography, genomic which is a study of whole genomes of organisms and protein sequences. Learning from these data facilitates understanding and identification of human health and disease is quite easy. The artificial neural networks, deep learning-based algorithms shows great promise in guiding, enhancing and extracting features and learning patterns from complex data within a span of time. In this paper we tried to present the basic idea about Coronary Artery Disease (CAD), Angiogram and literature on angiogram technique used to detect and predict Coronary Artery Disease using deep learning techniques.

Key words: Coronary Artery Disease, Artificial Neural Networks, Deep Learning Copy Rights reserved@ ACCESS-2020

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82. Comparative Investigation on Multi-Band Antenna Using FR-4 & RT-Duroid *Prashanth. K. V1.2. a), Pradeep M. Hadalqi1. b), P. V. Hunagund1. c)*

1 Department of PG Studies and Research in Applied Electronics, Gulbarga University, Kalaburagi - 585 106 KARNATAKA, India.

2.Dept. Of ECE, Koneru Lakshmaiah Education foundation - Hyderabad - 500075, TELANGANA, INDIA a) prashanth32633@gmail.com, b) pm_hadalgi@rediffmail.com, c) prabhakar_hunagund@yahoo.co.in

Abstract: The comparative design & investigation of the multiple resonances are analyzed on two substrates using FR-4 & RT-Duroid. The DGS is designed on the ground plane with the combination of slots getting into shaped as E-shape & stacked U-shape. The proposed model has responded to multiple resonances on two substrates. Once the DGS has inserted the various parameters are improved such as return loss, Gain & bandwidth. The dimensions for FR-4 substrate & RT-Duroid are 30mm x 20mm x 1.6mm & 30mm x 20mm x 1.2mm respectively. The main aim of the proposed antenna is to use for multiple applicat ions. This can be achieved by tuning the defected ground structure. In this proposed antenna the 50-ohm line feed technique has been utilized for both the designs.

Keywords: Defected Ground Structure (DGS), Photonic Band Gap (PBG), Multi-band, 3D Gain, FR-4, Rogers-5880, UWB, SWB

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International Conference on ADVANCES IN COMMUNICATIONS, COMPUTING AND EMBEDDED SYSTEMS September 18 – 19, 2020 ISBN 13: 978-81-930222-9-0

83. A SURVEY FOR IOT AUTHENTICATION-CURRENT RESEARCH AND OPEN CHALLENGES

Mihir Mehta¹ and Kajal Patel²

¹Research Scholar, Gujarat Technological University, mihir240491@gmail.com ²Associate Professor, VGEC – Chandkheda, kspldce@gmail.com

Abstract: Internet of things is becoming the most important technology now a days and it is next era of communication. By the use of IOT, various physical things can communicate, interact and exchange data seamlessly. IOT brings intelligence and automation in different areas like agriculture, transportation, industry, health and many more. The ultimate goal of the IOT applications is to increase comfort and efficiency of the users. IOT architecture comprises of various objects and things which are connected to open network. This openness/this exposure provides fertile ground for various types of security attacks. Security and Protection are the significant perspective of IOT Network. Conventional Security approaches can't be applied directly to the resource constrained network. Authentication confirms the identity of each individual registered entity in the network. It is very much important to verify and validate identity of device as compromised device can damage to the network. IOT applications can significantly be useful to society when these security issues at each layer (Perception, Network and Application) are analyzed and solved. In this paper, a detailed review of the security related challenges specially related to Authentication and source of threats in IOT applications is discussed. A brief comparison of recent advancements in various domains of IOT Authentication security is also summarized with future direction for research.

Keywords: IOT, Authentication, Authorization, Encryption, Spoofing attack, MITM attack Copy Rights reserved@ ACCESS-2020

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84. Design and Calibration of Fiber Bragg Grating Sensor for Analysis of Real Time Wrist Angular Grip Strength

Dr. Chethana K1, Dr. Rajini V Honnungar2, Ibrar Jahan M A3, Dr Guruprasad A S4, Dr. Asokan4 IJyothy Institute of Technology, VTU, Bengaluru, 2RNS Institute of Technology, VTU, Bengaluru 3RNS Institute of Technology, VTU, Bengaluru, 4Indian Institute of Science, Bengaluru

Abstract: The paper describes a non-invasive method to measure wrist angular hand grip muscular strength exhausting Fiber Bragg Grating sensor based Hand Grip Device (FBGHGD). The device is used to measure and collect real time data analysis of human hand grip skeletal muscle force for different angular positions. The assessment of human hand grip is required for study and analysis of and biomechanical parameters like limb strength, neuromuscular function, fracture of vertebral bones, weakness of nerves etc. In this work, the wavelength responses of Fiber Bragg Grating (FBG)which is seen as a variation of strain are utilized to obtain the force applied by the human hand grip encapsulated in a mechanical package.

Keywords: Fiber Bragg Grating, Hand Grip Force, Musculoskeletal, non-invasive, clinical study

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85. PERFORMANCE ANALYSIS OF PERISTALTIC PUMP WITH NON-NEWTONIAN FLUID: A TAGUCHI APPROACH

P. Srinivasa Rao¹, G. Bhanodaya Reddy²

¹Research Scholar, Department of Mechanical Engineering, Sri Venkateswara University, Tirupati 517 502, AP, India, psr.svumechphd@gmail.com

²Professor of Mechanical Engineering, Sri Venkateswara University, Tirupati 517 502, AP, India,

bhanodayg@yahoo.com

Abstract: The current paper describes about the performance analysis of peristaltic pump which is used in various fields of applications such as food processing industries, chemical handling, testing and research, engineering and manufacturing sectors, agriculture and biological systems. In this research work tomato paste has been used for analyzing the performance of peristaltic pump and experiments are conducted as per L25 orthogonal array design which is developed by considering the parameters rotor speed, number of rollers and tube diameter with various levels. Results are analyzed by using taguchi method by considering lower the better condition formula for suitable application. Finally an optimal combination of parameters which gives best performance is derived and confirmed.

Keywords: Design of experiments, lower the better characteristics, peristaltic pump fabrication, S/N ratio analysis of performance measures: pressure, wave length, amplitude and discharge





86 Performance Analysis of Machine Learning Algorithms on Automated Sleep Staging Feature Sets 'Mr.Santosh Kumar Satapathy, Research Scholar,CSE, Pondicherry Engineering College, Puducherry, India, santosh.satapathy@pec.edu,

²Mr.Hari Kishan Kondaveeti, Assistant Professor,CSE, VIT - AP, Amaravati, Amaravati, Andhra Pradesh, India, kishan.kondaveeti@gmail.com,

³Mr.Rama Krushna Rath, Research Scholar,CSE, Anna University, Chennai, India, ram.rrr.rath@gmail.com, ⁴Dr.D Logannathan, Professor, CSE, Pondicherry Engineering College, Puducherry, India,

drloganathan@pec.edu

Abstract: Background and objective: With the speeding up of social activities, rapid changes in lifestyles, and an increase in the pressure in professional fields, people are suffering from several types of sleep-related disorders. It is witnessed that many of the sleep-related disorders are the symptoms of neurological disorders in the latter part of life and which affect the quality of life in daily activities. The crucial steps involved in diagnosing these disorders are analysis and classification of sleep stages. It is difficult for clinicians to analyze the sleep staging in traditional and manual lab environment methods. An automated computer-assisted sleep stage scoring system is essential for the diagnosis of various types of sleep-related diseases accurately. The complete process of automated approach of sleep stages classification is majorly executing through four steps: pre-processing the raw signals, feature extraction, feature selection, and classification. Accurate analysis and understanding of the characteristics of sleep electroencephalogram (EEG) features is one important step to improve the accuracy of sleep stages classification. Method: In this paper, we focus on the analysis of a single channel of EEG signals and its extracted features during sleep recordings. In this study, we have extracted twelve statistical properties from input signals. The proposed models are tested in three different combinations of features sets. In the first experiment, the feature set contained all the 12 features. The second and third experiments are conducted with the nine and five best features extracted using the ReliefF feature selection algorithm, respectively. The patient records come from the ISRUC-Sleep database. Two different category subjects are considered for analysis the sleep irregularities, one section of data contained healthy controlled and other section of data of subjects who affected with different sleep problems The three different combinations of feature sets are used for classification of sleep stages based on single-channel of EEG signals using a decision tree (DT), K-nearest neighbor (KNN) and random forest (RF). Results and Conclusion: By comparison, three different combinations of feature sets can achieve three different sleep staging results. The highest classification accuracy achieved for sleep staging through combinations of five features set. From both categories of subjects, the reported accuracy results exceeded above 90%. As per outcome from the proposed system the random forest classification techniques achieved best accuracy incomparable to the other two classifiers. This performance of the proposed system in terms of accuracy, sensitivity, and specificity are efficient with comparable to the state-of-the-art works. In this study, we have made a comparison between the performances in terms of effective combinations of feature sets and classification algorithm effectiveness regarding discrimination between the sleep stages. different intelligent techniques in related to process of diagnosing and treatment of sleep disorders.

Keywords: sleep states, EEG signal, feature extraction, classification, machine learning Copy Rights reserved@ ACCESS-2020





87. A DEEP LEARNING BASED CROP DISEASE CLASSIFICATION USING TRANSFER LEARNING V Sravan, Swaraja K, Meenakshi K and Padmavathi Kora, Department of ECE, GRIET, Hyderabad, India, sravanvemi1995@gmail.com

Abstract: Healthy crops play crucial role in agriculture sector, which is backbone of our country. Unidentified crop diseases may lead to huge loss in agriculture sector and therefore rapid identification and detection of this is necessary. Correct identification and detection of the crop diseases may save the crops from being spoiled. Farmers cannot identify the disease just by observing the crop leaf, as the healthy crop and the affected crop appears same at the initial stages. This issue can be solved by implementing Deep learning models. The data collected for this study comprises of 20,639 images, which is taken from Plant village database. This research work is carried out by fine tuning three pre-trained deep convolutional neural network (DCNN) models - ResNet50, VGG16 and Alex Net, with hyper parameters such as learning rate, mini-batch size and number of epochs. The proposed methodology achieves highest classification accuracy of 99.26 percent by fine tuning ResNet50.

Keywords: *AlexNet, Agriculture, Crop disease, deep convolutional neural network, Fine tuning, ResNet5o, VGG16* Copy Rights reserved@ ACCESS-2020



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88. DWT architecture design for Medical systems using Self Repair Fault Tolerant Adder in CMOS technology

Sureshkumar Pittala, Sasikala Duraisamy

Abstract: In recent years, processor cores for biomedical signal processing play a vital role for portable devices. The processing unit in the device performs acquisition, feature detection and decision making. The computing algorithm comprises of adders, multipliers, registers, and buffers. Adders are the basic building blocks of multipliers, filters and feature extraction units. Discrete Wavelet transform is one of the important methods used to filter and extract information from biomedical signals which can be one dimensional or multidimensional. Fault avoidance and tolerance have been approached in past for achieving efficient and reliable system. These prevention and tolerance through redundancy can avoid failures. Different redundancy are adopted through information processing, hardware, software and time redundancy. Fault tolerant circuits can improve the efficiency of the biomedical system like DWT cores. The main objective is to design a reconfigurable full adder with self-checking and self-repairing faults for the DWT architecture. This paper presents a proposed FPGA based fault detection and repairing circuit including the fault location. The existing method uses an on-chip based adder which is complex and is less efficient and not suitable for reprogramming. In the proposed design, DWT architecture was designed using the reconfigurable multiplier, fault tolerant adder and Flip Flop. The implementation was carried out in Quartus Tool for different FPGA kits designed with 90nm and 65nm CMOS technology. Parameters like LUT, power dissipation and delay are investigated. The proposed approach is suitable for portable devices.

Keywords: CMOS, Adder, Fault Tolerant, RCA, CSA, Low power, Processing element Copy Rights reserved@ ACCESS-2020





89. Real Time Data on Hand Grip Strength in a Population-Based Study using Fiber Bragg Grating Dr.Chethana K¹, Dr.Rajini V Honnungar², Manasa Murali¹, Dr. Guruprasad A S³, Dr. Asokan³ ¹Jyothy Institute of Technology, VTU, Bengaluru, ²RNS Institute of Technology, VTU, Bengaluru ³Indian Institute of Science, Bengaluru

Abstract: Grip strength, also known as wrist angular strength is anthropometric measurement which is an indicator of hand muscle health. The measurement is included in longitudinal studies because it is an indicator of the overall well-being of a person. Grip strength can be used as a screening tool for measurement of upper body strength and overall strength. It is also used as an easy measure of skeletal muscle and neuromuscular functions. The body strength plays an important role in determining the abilities or ailments of the physical human body. We can test the human body with respect to the hand grip measurement which is proportional to the body strength in individuals of all age groups in different wrist positions such as extension, flexion and normal to produce real time data. Fiber Bragg Grating (FBG) sensor is a type of distributed Bragg reflector, constructed in a segment of optical fiber that reflects specific wavelengths of light and transmits the rest, whose reflections are recorded as change in wavelength in the form of waveforms. The obtained results are later converted to force in kilograms by using a calibration value obtained using load cell. The results obtained by FBG sensor can be accessed directly through a computer which records the real time data both numerically and in the form of graph.

Keywords: Fiber Bragg Grating(FBG), Bragg reflector, hand grip strength, longitudinal studies, neuromuscular functions, extension, flexion, normal.

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90. Design of Multiplier for	Arithmetic-High-Level Synthesis us	ing Modified Booth Encoding
B.Supritha	Kiran Mannem	B.Veera Reddy
Dept. of ECE ,GRIET	Dept. of ECE, GRIET	Dept. of ECE, GRIET
Hyderabad, India	Hyderabad, India	Hyderabad, India
suprithabavanthi@gmail.com	kiranmannem14@gmail.com	veerareddy57@gmail.com

Abstract: Though there are various types of multipliers presently, although fractional multipliers effectively planned through making a few sections working in equal, the structure of halfway convey spare multipliers is additionally testing. Earlier methodologies proposed a few arrangements using booth recoding with radix-4. The present system forms it conceivable to decrease the stature considerably, which is the utmost broad choice while planning, just simple products recommended. Bigger values of radix in addition decreases to the detriment in presence of products. So as to relieve the deferral, from the former studies, initially recommended to detach calculation utilizing the accessible leeway. Normally in binary multiplication and operation is used for partial products of multiplier and multiplicand. In case of Booth Multiplier the multiples are encoded. For n bit by n-bit multiplication, n/2 partial products are obtained for radix 4 and n/3 for radix-8. Thinking about this, encoding method is implemented so that partial products are reduced. In the proposed methodology we will use modified carry skip adder for high speed operation.

Index Terms—Multipliers, Booth, Encoding, carry skip, delay, area.





91. Design considerations of High Linear SAR-ADC for Wireless Implantable Systems SilpaKesav Velagaleti, ECE Department, CVR College of Engineering Hyderabad, India, shilpakesav@gmail.com Dr. K.S. Nayanathara ECE Department CVR College of Engineering Hyderabad, India, ksattirajunayanathara@gmail.com

Dr. B.K. Madhavi ECE Department Siddhartha Institute of Engineering and Technology Hyderabad, India, bkmadhavi2009@gmail.com

Abstract: In Wireless Implantable Systems (WIS) linearity is the most prominent performance metric at low frequencies. Successive Approximation Register Analog to Digital Converter (SAR-ADC) is used for data processing in WIS. The required components of SAR-ADC are sample and hold circuit, comparator, successive approximation register, and digital to analog converter. Operational amplifiers are used for designing comparators and Sample and Hold(S/H) circuit. In this SAR-ADC architecture comparator and sample and hold circuit using operational amplifiers was replaced by dynamic latch comparator and a bootstrap circuit which provides less power consumption for battery-operated WIS. This paper reviews different SAR-ADC architectures for low-frequency applications and presents linearity improvement technique in S/H circuit. The 10-bit SAR-ADC was designed in cadence virtuoso in 45nmCMOS technology. Nearly 99% of linearity was achieved with this SAR-ADC architecture.

Keywords: Wireless Implantable Systems, SAR-ADC, Dynamic latch comparator, sample and hold, linearity.

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92. PV System Integration with Multilevel UPQC For Power Quality Improvement in Distribution System *KBVSR. Subrahmanyam, Department of EEE, S R Engineering College Warangal, India. libra_22@rediffmail.com B. Gopal, Department of EEE, Priyadarshini Institute of Science & Technology for Women Khammam, India bgopaleee@gmail.com*

Abstract: Now-a-days, power consumption is increasing day by day due to world industrialization. To conserve fossil fuels for future generations, distribution energy generations (DG) are the best alternative. Wind and PV play a key role on renewable power generation. The power quality is the main constraint while feeding power to distribution loads. In this paper, DG is used to feed power to Unified Power Quality Conditioner (UPQC) through a multi-level converter. The multilevel converter is used as shunt and series converters of UPQC, and by using this converter, the harmonic component presented in the output of the converter is reduced and compared to the conventional 2level converter output and also reduce %THD presented on the fundamental value. Due to this, the filter requirement to filter out harmonic component is less compared to conventional case. The inclusion of multilevel converters in UPQC can reduce the filtering requirement, power loss and reactive power consumed by the converter. All the results are simulated and presented.

Keywords: Distributed Generation (DG), Multilevel converter (ML), Power Quality (PQ), Unified power quality conditioner (UPQC), Total Harmonic Distortion (THD).

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93. Classification of Crackle Sounds using Support Vector Machine *C. Phani Sudershanand, S.V. N. Narayana Rao*

VNRVJIET, Hyderabad- 500090, India, phanisudershancasturi@gmail.com, svnnrao@gmail.com

Abstract: Crackle sound is one of adventitious lung sounds. This paper deals with a novel method of analyzing lung sound signals using discrete wavelet transform, and classification using support vector machine (SVM). The de-noised lung sounds are transformed to time-frequency domain using discrete wavelet transform. The sub-band coefficients are represented using a time varying auto regressive model. From the model, various statistical features are extracted, and classification is done using SVM. Cross-validation is used for assessing the predictive performance of the model. Thesensitivity, specificity, precision and accuracy of the model are 96%, 88%,88% and 92.6% respectively.

Index Terms: Discrete wavelet transform, Respiratory sounds, Support Vector Machine, Cross validation. Copy Rights reserved@ ACCESS-2020



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94. A Scrutiny of Advanced Technologies over Precision Agriculture

V.V.S.S Sirisha, Department of Electronics and Communication Engg., VNR Vignan Jyoti Institute of Engg and Technology, Hyderabad, India, sirishavvss96@gmail.com

G.Sahitya, Assistant professor, Department of Electronics and Communication Engg., VNR Vignan Jyoti Institute of Engg and Technology, Hyderabad, India, sahitya_g@vnrvjiet.in

Abstract: This paper explains the impact and needs of Precision agriculture over-irrigation planning. Aiming at reducing the amount of water consumption and increasing the productivity over the field, a system is designed based on low power, small and robust Wi-Fi micro-controller for IoT application interfaced with a motor pump to proceed with the irrigation process. The Real-time data from the physical sensors as well as the weather forecast from weather API with a delay of 3-4 hrs is collected and transmitted to the base station with the help of IoT. The field is continuously monitored with the help of the real-time sensors and the desired amount of water is released into the field only when it crosses a certain threshold. An additional advantage is that day of irrigation for upcoming days is also set by the user and can be changed depending upon the weather conditions such as if it rains irrigation can be postponed to another day. This paper presents a brief review of many research works and came to a conclusion of a smart irrigation system with the implementation of IoT using a prediction algorithm.

Keywords: Precision agriculture, IoT, Prediction algorithm, Weather API, Wi-Fi.





95. Discourse Anaphors in ILCI Corpora: Generalizing Mapping Strategies Based on A Centering Theory *Harjit Singh, Indira Gandhi National Tribal University, Amarkantak (M.P.), harjitsingh.jnu@gmail.com*

Abstract. The purpose of the study is to find out inter- sentential/discourse anaphors in the ILCI-Punjabi corpora and suggesting the mapping strategies for automatic binding between antecedent and anaphors by a centering theory. We analysis approximate 1,000 POS tagged sentence files and find cross-sentential anaphors. In generative literature, there is a binding oriented mechanism possible for anaphors. However, we would like to frame the issue with the help of a centering theory. In short, we have seven sections in this paper. In the first section, we introduce the anaphors in the context of a natural language processing. In the second section, we see various pronominal forms of discourse anaphors. In the third section, we briefly focus on the (Topic continuity, hierarchy and cognitive models) of discourse anaphors. In the fourth section, we mention the objectives of the study. In the fifth section, we discuss the discourse anaphors in ILCI Corpora. In the sixth section, we discuss the interaction between a centering theory and discourse anaphors. In the last section, we conclude the entire work by claiming that the use of a centering theory is more relevant to develop algorithm for discourse anaphors.

Keywords: discourse anaphor, ILCI, Cf, Cb, salience, ranking

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96. Taxonomy of Evolutionary Techniques application in Power systems

B. Vedik Electrical and Electronics Engineering S R Engineering College Warangal, India dr.vedik_b@srecwarangal.ac.in

Chandan Kumar Shiva Electrical and Electronics Engineering S R Engineering College Warangal, India, dr.shiva_ck@srecwrangal.ac.in

M. Sai Kumar Electrical and Electronics Engineering S R Engineering College Warangal, India sai_kumar_m@srecwarangal.ac.in

Abstract: Application of optimization techniques in power systems has begun over last 50 years. In recent times, evolutionary techniques and in general nature-inspired techniques have gained lots of attention and are found to be very useful for solving various engineering optimization problems. This is due to increase in robustness, reliability, growing demand for artificial intelligence methods, parallel computing, and availability of open source software. Therefore, in the present paper an attempt is made to briefly review and explore the application of these techniques in power systems in four main areas, namely, economic load dispatch, load frequency control, optimal power flow, and optimal PMU placement problems. A number of papers are listed in this taxonomy which illustrations the contribution in each paper.

Keywords: Evolutionary technique, economic load dispatch, load frequency control, optimal power flow, optimal PMU placement, power system

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97. Simulation of Different Third Harmonic Injected PWM Strategies for 5-Level Diode-Clamped Multilevel Inverter

Dr. M. Lakshmi Swarupa¹, V. Sarada², Ch. Shravani³

1Professor, EEE Department, CVR College of Engineering, Email: swarupamalladi@gmail.com 2Asst., Professor, EEE Department, CVR College of Engineering, Email: saradavoo1@gmail.com 3Asst., Professor, EEE Department, CVR College of Engineering, Email: shravanc2@gmail.com

Abstract: Multilevel Inverters have widespread industrial drive applications, HVDC and UPS. Multi-level Inverters also find major application in the Stand-alone and Grid- connected Systems. The conventional two-level inverters have some limitations in operating at high frequencies mainly due to switching losses and constraints in device rating. The problem is resolved by means of Diode- clamped multilevel inverters (MLIs) which utilize lower switching frequencies and give high voltages with improved total harmonic distortion (THD) without use of filter. Modulation schemes for multilevel inverter are required to overcome input voltage changes and meet the need of voltage/frequency control. With the advent of multilevel inverters, power quality researchers focused on extending the conventional two-level modulation to multilevel case. While it gave rise to increased complexity in order to control more power switches, more flexibility was provided by the additional switching states generated by these topologies. This paper presents the comparison of 5-level diode-clamped Multi level inverters with several Modulation schemes. The simulation results are discussed in detail and the comparison table is presented in terms of THD, Output Voltage.

Index Terms: MLI (Multi-Level Inverter), THD (Total Harmonic Distortion), DCMLI (Diode-Clamped Multi Level Inverter).

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98. Wavelet based Fault Analysis of a 5-Bus system with SVC Controller under fault and sudden load

conditions			
J. Pardha Saradhi	R. Srinivasarao	V. Ganesh	
Asst. Professor	Professor	Professor	
Bapatla Engineering College, Bapatla	JNTUK, Kakinada	JNTUACEP, Pulivendula	
pardhasaradhi.jpalli@gmail.com	srinivas.jntueee@gmail.com	ganivg@gmail.com	

Abstract: The changes in power quality are very quick and a difficult task to know under power networks. Most of the power quality issues are observed in interconnected networks due to different sources of power generation can be attributed to temporary faults and sudden load conditions. Power quality problems can be minimised may be inventing by new devices. The Flexible AC Transmission Systems (FACTS) provide one of the fastest controls of reactive and active power through a multi bus system. The Static Var Compensator (SVC) is one of the FACTS controllers with reasonably good features. Operating with multiterminal systems, when incorporating with FACTS devices are very complex in power systems, which needs effective and detailed study. The present research work explores the analysis of wavelet multi resolution with the usage of the mother wavelet Bior1.5 for different Power Quality problems are presented to evaluate the analysis of a 5-bus network .In this work different power quality issues are tested during temporary faults and sudden load conditions and the performance and effectiveness is analyzed in the environment of SVC. The effectiveness of wavelets are useful to find out the fault in under fault conditions as well as under sudden loading conditions.

Keywords: power quality, SVC, wavelets, transients, faults





99. Distractor Filtering by Context Aware Models in MCQs

Shanthi Murugan, Department of Computer Applications, National Institute of Technology, Tiruchirappalli, Tamil Nadu 620015, INDIA, shanthicse9@gmail.com

Balasundaram Sadhu Ramakrishnan, Department of Computer Applications, National Institute of Technology, Tiruchirappalli, Tamil Nadu 620015, INDIA, blsundar@nitt.edu

Abstract: Assessment of knowledge in the usage of affix-based words is very much essential in the context of learning any language. Designing such questions focusing on the morphological aspects in the automated way is a challenging one. Especially, generating the distractors w.r.t. MCQs automatically concerned with affix words in Tamil Language is focused in this paper. In this study, we mainly focused on distractor filtering through context aware language models by two approaches. First one, list is filtered through masked word prediction from pre-trained BERT model. Next, filtering is formulated as sentence classification which implicitly checks the sentence completion in terms of morphemes. Classification model is fine-tuned from pre-trained multilingual model. Experimental results show that masked language model outperforms the classification model due to low dataset used in fine-tuning process. Compared to trigram filtering approach context aware language model optimizes reliability in affix based distractor generation.

Index Terms: List key index terms here. No mare than 5.

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operating conditions. Stationary wavelet transform is employed to get the 3- ϕ currents fault residues and then discrete wavelet transform is employed to extract the disturbance information from the 3- ϕ residue currents. In order to find the fault location and phase identification fault index and 3- ϕ energies are compared with adaptive thresholds. Under different operating conditions finally, the algorithm is tested with practical data for single-phasing and various levels of inter-turn short circuit faults. By using acquired practical results the validity and successfulness of a proposed algorithm is clearly determined.

Index Terms: Electrically-Excited synchronous motor, inter-turn faults, Adaptive threshold Copy Rights reserved@ ACCESS-2020





101. A new approach for Resource Scheduling in Cloud TaaS using Deep learning Reinforcement algorithm K. Priyadarsini, Department of Computer Science and Engineering, VISTAS, Chennai, India, priyadarsini.se@velsuniv.ac.in

Karthik S, Department of Electronics and Communication Engineering, Vadapalani Campus, SRM IST, Chennai, India, karthiks:@srmist.edu.in

Abstract: Many organizations all over the world use cloud computing- Testing as Service (Taas) for his or her services. Cloud Computing is principally based on the idea of on-demand delivery of computations, storage, applications, and additional resources. It depends upon delivering users services through Internet connectivity. In addition, it uses a pay-as-you-go business design to take care of users' services. It offers some essential characteristics including on-demand service, resource pooling, rapid elasticity, virtualization, and measured services. Simultaneously, there are various kinds of virtualization such as for example full virtualization, para-virtualization, emulation, OS virtualization, and application virtualization. Resource scheduling in the Testing as a service is among the most challenging jobs where resources need to be allocated to the mandatory tasks/jobs based on the needed Quality of application and projects, Because of the cloud environment, uncertainty, and perhaps heterogeneity, resource allocation can't be addressed with the prevailing policies. The problem still a significant concern of the majority of the cloud providers where they face troubles in selecting the correct resource scheduling algorithm for a particular workload, especially in this paper, we use among the Artificial Intelligence (AI) emergent algorithms, Deep Reinforcement Learning, (Deep Reinforcement Learning for Taas Cloud Scheduling (DRLTCS)), to resolve the issue of resource scheduling in cloud Testing as a Service.

Keywords: Cloud computing, Testing as a service, Scheduling, Artificial Intelligence, reinforcement learning; Copy Rights reserved@ ACCESS-2020



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102. Detection of Carcinoma Cell Using Single Cell Trap Array

Syed.shameem, Suresh.Namgiri, Sai Teja V. S. V, Venkata Sai Nikhil S, Siva Sai Kumar M, P. S. Srinivas babu Dept. of E.C.E, Koneru Lakshmaiah Educational Foundation, Vaddeswaram, AP, India shameemsyed@yahoo.com, namgirisuresh@kluniversity.in, saaiteja1999@gmail.com, nikhilprince9999@gmail.com, mannemsais@gmail.com, satyasrinivas.p@gmail.com

Abstract: Carcinoma cell (Cancer cell) detection is one of the important aspects in the field of medical industry. Singular cells can be distinguished based on contrasts in size and dielectric properties utilizing electrical procedures that are non-obtrusive. In this paper we have proposed a microfluidic based horizontal trapping model to trap single cancer cell. The variation in impedance at the trapping area is observed when a cell is trapped. The change in the impedance values at the trapping area is an indicator of cancer cell's presence in the blood. Single-cell microfluidic examination frames require innovative responses for individual cell capture and detection.

Keywords: laminar flow, trap, impedance, carcinoma cell, normal cell Copy Rights reserved@ ACCESS-2020





103. Design and Analysis of mems model to separate white blood cells from Human blood Syed. shameem, Suresh. Namgiri, Kandula Ajay Kumar, Cheedella Akhil, Areti Lakshmi sireesha, P.S.Srinivas babu

Koneru Lakshmaiah Educational Foundation, Vaddeswaram, AP, India shameemsyed@yahoo.com, namgirisuresh@kluniversity.in, ajaykumarkandula3@gmail.com, akhil.chvsao3@gmail.com, sirishaaretii @gmail.com, satyasrinivas.p@gmail.com

Abstract: In this paper, the microfluidic channel model is designed and modeled using Comsol Multiphysics to differentiate blood cells into platelets, white blood cells, and red blood cells. Finally, white blood cells are separated. The main reason for separating white blood cells is these cells should be injected into a person's blood separately who's WBC are fewer and whenever someone is diseased like leukaemia, cancer. Blood transfusion is very important treatment that replaces blood. Separation technique uses dielectrophoretic force bid on the particles so that the particles flows through a micro-fluid channel. The flow of cells through a micro channel is modeled by giving an alternate voltage of 5V for the separation region. These particles are demonstrated dielectrophoretic behavior in the presence of electric fields. Under the power of Dielectrophorosis (DEP) energy, we plotted the flow of separating platelets, white blood cells, and red blood cells. In this study, we did a two-stage microfluidic device. First we separated platelets for the blood as there are two outlets, from one outlet platelets are separated and another outlet is a combination of white blood cells (WBCs) and red blood cells(RBCs).

Keywords: Dielectro-phorosis, Separation, Micro channel, Permittivity, Conductivity, Polarization.

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104. Biometric Finger Print based Voting Machine using ATmega328P Microcontroller Kanwardeep Singh Gehlot1*, Divanshu Jain1

1JK Lakshmipat University, Jaipur, India (kanwardeepgahlot,divanshujain)@jklu.edu.in

Abstract: This paper presents an approach of the designing of a finger print based voting system using fingerprint module and ATmega328P. First we are having one database which will store all the valid information of user such as Aadhar Card Number, finger print (linked with Aadhar Card) and Voter Id number. Now at the time of Voting, using the individual login credentials the user will fill all his/her details in registration form. This information will be checked by our database server, if all the information about the voter matches with the server feed information the user can move for voting process otherwise it will end the process. After reaching at voting process, user will first verify his/her fingerprint pattern and then he can vote. Here the user will be recognized by his/her unique fingerprint pattern. Since the finger print pattern is not same for any two persons. So, the voter can't vote twice or more. This system also give permission to admin to get the result just after the election completes. And allow admin to change/delete the data after completing the election result.

Index Terms: Arduino UNO, Atmega328P microcontroller, R307 Optical Fingerprint Reader Sensor Module, LCD Display





105. Image Digest using Color Vector Angle and dominant Walsh-Hadamard Transform coefficients 1st Naveena Budda Department of ECE GRIET Bachupally, Hyderabad, India naveenabudda05@gmail.com 2nd K. Meenakshi Department of ECE GRIET Bachupally, Hyderabad, India mkollati@gmail.com 3rd Padmavathi Kora Department of ECE GRIET Bachupally, Hyderabad, India padma386@gmail.com 4th G.V Subba Reddy Department of ECE GRIET Bachupally, Hyderabad, India gvsreddy2005@gmail.com 5th K. Swaraja Department of ECE GRIET Bachupally, Hyderabad, India kswaraja@gmail.com

Abstract: The classical image hash functions only explore luminance components of color images to produce robust hashes and then causing poor discriminative capabilities. This work developes a robust image hash function for RGB images, which exploits all the R, G, and B components of color images into account and achieves good discrimination. Firstly, the proposed hash function preprocesses the input image to a fixed size. Secondly, it extracts dominant approximation components by using a Gaussian Low pass filter from each color component R, G and B. Thirdly, Color Vector Angle (CVA) is applied on merged three planes of the image. Fourthly Walsh-Hadamard transform is applied on 8 _ 8 blocks. The dominant dc coefficients are taken for the hash generation. Finally, it takes the Hamming distances as a similarity measurement between the original and extracted hashes. Experiments conducted to validate the efficiency of our hash function. Results from the simulation indicate that our Hash function outperforms the classification efficiency measured algorithm between perceptual robustness and discriminating capability.

Index Terms: Color vector angle, Walsh-Hadamard transform, Discriminating capability, Hamming Distance Copy Rights reserved@ ACCESS-2020



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106. Obscuring of Data Leakage in Static Memory Cell and Optimization of WRITE Power Gopala Krishna Pasumarty Information & Technology GRIET Hyderabad,India pasumarty.gopi@gmail.com N V Ganapathi Raju Information & Technology GRIET Hyderabad,India nvgraju@griet.ac.in Sankararao Majji Electronics & Communication Engg GRIET Hyderabad,India sankar3267@gmail.com

Abstract: With the limitations of CMOS technology scaling, rigorous research of alternate and competent technologies are emerged to impel the boundaries of digital computing. In this article, we proposed a simple, yet power and performance efficient methods of memory implementation. Present research attempts have been faithful to studying and performing these memory implementation techniques. In this article we addressed the issues and describes the current advanced methods of data storage. Conventionally the WRITE operation in static memory consumes more power than the dynamic power associated with it because of the high bit line voltage swing during the WRITE operation. This work presents the designing and characterization of ultra-scalable SRAM in terms of power and performance. The simulations are carried out at 180nm CMOS technology. The simulation results and functionality are differentiated with conventional memory units. *Keywords: CMOS, digital computing, static memory, voltage swing, data storage.*





107. An Optimized Area Efficient Implementation of FIR Filter using Shift Add Multiplier with Carry Look Ahead Adder

Sripathi Samyuktha*, Chaitanya Duggineni, N. Swetha, Himabindu Valiveti samyuktha102@gmail.com*, chaiturohini@gmail.com, swethakarima@gmail.com, valivety.bindu@gmail.com Department of Electronics and Communication Engineering, Gokaraju Rangaraju Institute of Engineering & Technology, Hyderabad-500090, Telangana, India

Abstract: Now-a-days FIR digital filter is being used in many fields for DSP applications. Multiplication, addition, delay unit are the main blocks for implementation of the FIR filter. In several processors multiplication plays a key role for arithmetic operations. In this paper for the analysis we will be using the ripple carry adder as adder block in Vedic multiplier and carry look ahead adder as adder block in shift add multiplier, for the partial products addition. The proposed design of Vedic multiplier uses the technique of Vedic mathematics to improve the performance. Presently multiplier has become a key block in most DSP systems' high speed processors. Here in this paper an attempt has been to design the different adders and multipliers using verilog code and simulation is done using Xilinx ISE 14.7. The power, delay, area for different bits are done and compared with graphs.

Keywords: Vedic multiplier, ripple carry adder, shift add multiplier, carry look ahead adder, FIR filter, Xilinx ISE, verilog code.

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108. CELL ZOOMING BASED FAULT IDENTIFICATION AND OPTIMAL ROUTING USING GLOW WORM-SATIN BOWERBIRD OPTIMIZATION

B. SANTHOSH KUMAR¹ & P. TRINATHA RAO²

1 Department of ECE, Institute of Aeronautical Engineering, Hyderabad, Telangana, India. Email Id:

bsanthoshkumar82@gmail.com

2 Department of ECE, GITAM School of Technology, GITAM Deemed to be University, Hyderabad, Telangana, India. Email Id: trinath.polipalli@gitam.edu

Abstract: Wireless sensor Networks plays a major role in today's world due to the development of technology and communications. It is used in all applications due to its small size and easy handling. But, the nodes in the wireless sensor network are battery sourced. This makes the lifetime of the network is limited. Another drawback in the wireless sensor network, is using the faulty nodes for the transmission. This results in erroneous data as well as reduce the energy of the node. Several works were carried out using optimization approach, routing protocols to improve the life time of the network. The faulty nodes are also improved by proper clustering in the network. In this paper, both the fault node identification and extending the life time of the node is considered. Here, the cell zooming is concept is used for solving the soft faults to recover the nodes by itself by enabling the sleep mechanism. The fault nodes are determined using the glow worm optimization. The reason to select the glow worm optimization, the position update is based on the glow to improve its neighbour and its search space and the final output will be the best solution with high glow. The routing of the packets will be perform through the Satin Bowerbird optimization. The main objective of the Satin bowerbird optimization is to perform the multi-objective and it is highly oriented towards the energy conservation. Due to this properties, the Satin bowerbird optimization is use to define the optimal route based on the energy efficient of the network. Analysis and simulation results show that the (GWO-SBO) proposed algorithm will outperforms than existing Trusted cluster based optimal multi-sink repositioning (TC-OMSR) and Emperor penguin optimization and flower pollination (EPO_FPA) by maintaining the throughput at 9000-10,500 bps throughout the network and reduce the energy consumption to prolong the network lifetime and its stability.

Keywords: Glow worm optimization, Satin Bowerbird optimization, Quality of service, Lifetime, Multi-hop communication, Sink nodes, WSNs

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109. Driver's Drowsiness Detection Using Dlib and IOT

Dr K Prasanna Lakshmi Professor, Dept of IT, , GRIET, Hyderabad, India , prasannakompalli@gmail.com, V Padma, Assoc.Prof, Dept of IT, , GRIET, Hyderabad, India, vpadma254@gmail.com Dr. N V Ganapathi Raju,, Professor, Dept of IT, , GRIET, Hyderabad, India , nvgraju@griet.ac.in, Vinod Mahesh Jain , Dept of IT, , GRIET, Hyderabad, , India , maheshjain251@gmail.com Vinod Mahesh Jain , Dept of IT, , GRIET, Hyderabad, , India , maheshjain251@gmail.com, A.Samuel , Dept of IT, , GRIET, Hyderabad, India , annepogu.samuel2209@gmail.com,

Abstract: Fatigue and microsleep of drivers while driving motor vehicles are among the critical reasons for road accidents. Consistently numerous individuals lose their lives because of deadly road accidents around the globe every year. In this paper, a prototype is built in a manner that it will accurately scrutinize the eye blink and whenever driver is found to be dozy, cautioning the driver will be carry forwarded every time not only that but also cautioning to the other vehicles moving around to be careful through an LCD Screen placed at the rear of the vehicle. Eye aspect ratio (EAR) will be calculated using dlib package and facial landmarks points which helps in locating the eyes.

Keywords: IOT, Face Detection, Drowsiness Detection, fatigue Identification, Sensors, Raspberry pi, Alert System, Eye Aspect Ratio (EAR)

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110. ECG Signal Classification using Capsule Neural Networks

Tejashwini Neela1Swetha Namburu2 1,2 Department of ECE, GRIET, Hyderabad, 500090 * E-mail: tejashwinineela@gmail.com * E-mail: swethakarima@gmail.com

Abstract: Cardiovascular diseases (CVD) are the dominent cause of deaths in the world, out of which 90% are curable. Electrocardiogram (ECG) measures the electrical stimulus of heart non invasively. Convolutional Neural Networks (CNN) act as one of the powerful machine learning techniques to classify ECG arrhythmia classification and other CVD's. Nonetheless, they have some functional flaws like ignorance of spatial hierarchies between the features and unable to acquire rotational invariance. To overcome these problems of CNN, a novel neural network named Capsule Network (CapsNet) is proposed as an efficient algorithm to provide error-free implementation of deep learning over the databases. The main objective of this paper is to implement CapsNet for ECG signal classification from MIT-BIH database and compare its efficiency with the pre-trained CNN networks.

Keywords: Electrocardiogram (ECG), Classification, Capsule Network, Convolution Neural Network (CNN), Dynamic Routing

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