ICISCT'19

INTERNATIONAL CONFERENCE ON INFORMATION SCIENCE & COMMUNICATION TECHNOLOGY

9 - 10 MARCH 2019

CONFERENCE PROCEEDINGS

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ORGANIZED BY

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PREFACE

This book includes the abstracts of all the papers presented at the International Conference on Information Science & Communication Technology (9^{th}-10^{th} March 2019), organized by the Department of Computer Science, University of Karachi (DCS, UoK). In total 210 papers were submitted by 350 authors, coming from different countries out of which 50 were accepted. The conference is organized into 2 plenary sessions that included a variety of topic areas such as Algorithm, Artificial Intelligence, Communication & Networks, Internet of Things, Cloud Computing & Big Data, Theoretical Computer Science & Software System, Nano Technology, Information Security & Cyber Security, Energy Efficient System in Computer Networks, Innovative Technology & Services and more.

A full conference program can be found before the relevant abstracts. In accordance with ICISCT's Publication Policy, the papers presented during this conference will be considered for inclusion in one of ICISCT's publications. The purpose of this abstract book is to provide members of ICISCT'19 and other academics around the world with a resource through which to discover colleagues and additional research relevant to their own work.

It is our hope that through ICISCT'19 conference, Karachi will become a place where academics and researchers from all over the world meet to discuss the developments of their discipline and present their work. I would like to thank all the participants, the members of the organizing and academic committees, and most importantly the administration staff of ICISCT'19 for putting this conference and its subsequent publications together. Specific individuals are listed on the page 7 and 8.

Dr. M. Sadiq Ali Khan

WELCOME MESSAGE FROM THE CONFERENCE CHAIR

On behalf of the ICISCT 2019 organizing committee, I am honored and delighted to welcome you to the 1st International Conference on Information Science & Communication Technology 2019, organized by the Department of Computer Science University of Karachi.

With the rapid growth of IT sector in Pakistan, the youth is greatly attracted to the field of Computer Science. I believe we have chosen a venue that guarantees a successful technical conference among this trending culture in Karachi.

I am particularly excited about the upcoming presentations from our keynote speakers on the use of information and analytics in innovative areas such as Algorithms, Artificial Intelligence, Communication & Networks, Internet of Things, Cloud Computing & Big Data, Theoretical Computer Science & Software System, Nano Technology, Information Security & Cyber Security, Energy Efficient System in Computer Networks and Innovative Technology & Services. Our technical program is rich and varied with 7 keynote speeches and 7 invited talks and around 48 technical papers split between 3 parallel oral sessions happening twice each day. We also expect to provide technical demonstrations, and numerous opportunities for informal networking.

As a conference chair of ICISCT'19, I know that the success of the conference depends on people who have worked with us in planning and organizing both technical program and supporting social arrangements. I appreciate Dr. Sadiq Ali Khan, for his dedicated services under his leadership, volunteerism has risen to new levels within the DCS community. In particular, we thank the Conference Co-Chairs for their wise advice and brilliant suggestion for organizing the technical program; the program committee for their thorough and timely reviewing of the papers. Most of all, I thank the participants, for enriching this conference by their presence. I hope they will enjoy the content and have a good time.

Prof. Dr. M. Ajmal Khan S.I.
Conference Chair of ICISCT'19
Vice Chancellor University of Karachi

WELCOME MESSAGE FROM CONFERENCE CO-CHAIRS

As co-chair and on behalf of the Organizing Committee, it is my privilege to welcome you to the International Conference on Information Science and Communication Technology (ICISCT) 2019 in the mega city of Karachi.

This conference aims to bring together leading academicians, researchers and scholars to exchange and share their latest research results on all aspects of Information Sciences and Communication Technology.

I am confident that the conference participants have made great contributions in research, teaching and practice, which has impacted many sectors of society and touched many aspects of our lives. Let us use this occasion to celebrate what we, as a professional community, have achieved.

I hope that this conference will provide a platform to share our thoughts, exchange ideas and to collectively figure out a way to chart our journey forward for even greater contributions to the society.

Dr. Mohammad Shahid Shaikh
Conference Co-Chair of ICISCT'19
Chair IEEE Karachi Section

WELCOME MESSAGE FROM CONFERENCE CO-CHAIRS

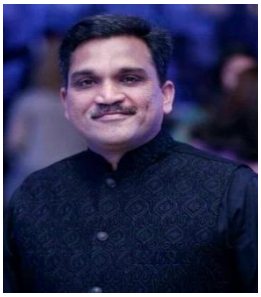
I warmly welcome you to the International Conference on Information Science & Communication Technology 2019 in the mega city of Karachi. The ICISCT 2019 provides a platform for academics and research scholars to share their experiences and research results on all aspects of Information Science and Communication Technology.

I am privileged to be co-chair of this important conference. ICISCT'19 speakers have made many contributions in research and teaching, impacting various sectors of our societies.

To help put this conference together, I would like to than all the people involved with ICISCT'19. I want to thank all Session Chairs for providing their wisdom and guidance; Professor Dr. Muhammad Ajmal Khan for his efforts to organize this conference; Dr. M. Sadiq Ali Khan for his many contributions including organizing the program & for his meticulous work in support of many conference activities including the invitation letters. We would like to thank all of the sponsoring organizations for providing their generous financial support. Lastly, we would like to thank all of the conference participants for their contributions which are the foundation of this conference.

Prof. Dr. Tabassum Mehboob
Conference Co-Chair of ICISCT'19
Dean, Faculty of Science, University of Karachi

WELCOME MESSAGE FROM CONFERENCE SECRETARY



On behalf of the Organizing Committee, we sincerely welcome you all to the 1st International Conference On Information Science & Communication Technology 2019 in the mega city of Karachi. The ICISCT 2019 event aims to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results on all aspects of Information Science and Communication Technology.

ICISCT'19 members have made tremendous contributions in research, teaching and practice, resulting impacts in many sectors of society. At this conference let us celebrate what we, as a professional community, have achieved. Additionally, our future vision is to create even greater value to all corners of the globe. This conference will be one for us to share our thoughts and exchange ideas on how to chart our journey forward to reach new heights.

We have an exciting program at this conference that will allow members to reflect upon and celebrate our past accomplishments, renew friendships and extend our networks, and jointly explore current and future research directions. We hope that you will have a productive and fun-filled time at this very special conference.

To put a conference of this magnitude together is not a small task. To that end, first of I thank to Almighty ALLAH and then thank to all Keynote Speakers and Invited Speakers that come all around the world and different parts of the provinces for their contributions which are the foundation of this conference. I thank to all sessions chairs for providing their wisdom and guidance; Dr. Mohammad Shahid Shaikh and Prof. Dr. Tabassum Mehboob for their many contributions including organizing the program; Professor Dr Muhammad Ajmal Khan Vice Chancellor University of Karachi for his support in organizing the ICSICT19; I would like to thank all of the sponsoring organizations for providing their generous financial support.

Most of all, I thank you, the participants, for enriching this conference by your presence. I hope you will enjoy the content and above all, have a good time.

Dr. Muhammad Sadiq Ali Khan
Conference Secretary of ICISCT'19
Chairman, Department of Computer Science, University of Karachi

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- ✓ Ms. Samia Masood Awan
- ✓ Ms. Yusra Khalid

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ICISCT-2019 PROGRAM SCHEDULE

Day 1			
Sat, Mar 09tth	**09:00-11:20**	**ICCBS Auditorium**	**Inaugural Session**
Session Moderator	***Ms. Shaista Rais***		
08:30 AM-09:30AM	Registration		
09:30 AM-09:40AM	Guest To Be Seated		
09:45 AM-09:50AM	**Recitation of Holy Quran**		
09:50 AM-09:55AM	**Naat-e-Rasool e Maqbool (S.A.W.W)**		
09:55 AM-10:05AM	**Welcome Address by Dr. M. Sadiq Ali Khan**		
	Conference Secretary & Chairman Department of Computer Science, UoK.		
10:05AM-10:15AM	**Address by Prof. Dr. Mohammad Shahid Shaikh**		
	Conference Co-Chair & Chair IEEE Karachi Section.		
10:15AM-10:45AM	**Keynote Address by Prof. Dr. Jonathan Andrew Ware**		
	Faculty of Computing Engineering & Science, University of South Wales, United Kingdom		
10:45AM-10:55AM	**Address by Prof. Dr. Muhammad Ajmal Khan**		
	Conference Chair & Vice Chancellor, University of Karachi.		
10:55AM-11:05AM	**Address by Chief Guest**		
11:05AM-11:15AM	**Token of Appreciations**		
11:15AM-11:20AM	**Vote of Thanks by Dr. Badar Sami**		

Sat, Mar 09th	**11:20-11:45**	**Hi-Tea**

Sat, Mar 09th	**11:50-01:15**	**ICCBS Auditorium**	**Plenary Session - I**
Session Moderator	***Dr. Nadeem Mehmood***		
11:50AM-12:15PM	**Keynote Address** by *Dr. Fakhrul Hazman Yusoff (Faculty of Comp & Math Sciences, Unversiti Teknologi MARA (UiTM), Malaysia)*		
	Topic: ***"Gamification of Alumni Management System"***		
12:15PM-12:40PM	**Keynote Address** by *Meritorious Prof. Dr. S. M. Aqil Burney (CCSIS - IOBM, Karachi)*		
	Topic: ***" Software Project's Risk management using COPULAS."***		
12:40PM-01:05PM	**Keynote Address** by Prof Dr. Bhawani Shankar Chowdhry		
	Topic: ***" Taking the lead for living in the digital age perfection"***		
01:05PM-01:15PM	Q/A Session		

Sat, Mar 09th	**01:15 - 02:00**	**Lunch & Namaz Break**

Sat, Mar 09th	**02:00 - 03:30**	**ICCBS Auditorium**	**Parallel Session - I**
Session Moderator	***Dr. Syed Asim Ali***		
Session Chair	***Prof Dr. Paulo P. Monteiro***		
Session Co-chair	***Dr. Abubakr Muhammad***		
02:00PM-02:20PM	**Invited Talk** by *Dr. Abubakr Muhammad (Center for Water Informatics & Technology, LUMS, Pakistan)*		
	Topic: ***"Revolutionizing water and agriculture sectors in Pakistan using informatics, systems analysis and robotics."***		
02:20PM-02:30PM	***Paper id53: "A Comparative Study of Rural Networking Solutions for Global Internet Access"*** *by* Mohsin Khalil, Zaheer Shamsi, Akmal Shabbir and Abdul Samad.		
02:30PM-02:40PM	***Paper id 45: " Validation of Hertz Theory in order to increase the efficiency of gear element "*** *by Atif Saeed*		
02:40PM-02:50PM	***Paper id34: " Community Algorithm Tool for Educational Domain (CATED) "*** *by "Dr. Muhammad Shahab Siddiqui, Sariya Mariyam, Rafia Hareem Khan".*		
02:50PM-03:00PM	***Paper id03: "Emotion Recognition Through Voice Patterns Featuring Python",*** *by Muneeba Anwar, Huma Rizvi, Alina Imtiaz and Maryam Fareed*		
03:00PM-03:10PM	Q/A session		
03:10PM-03:20PM	Token of Appreciation by Session Chairs		
03:20PM-03:30PM	Networking		

Sat, Mar 09th	**02:00 - 03:30**	**L. E. J Lecture Hall - A**	**Parallel Session - II**
Session Moderator	***Dr. Humera Tariq***		
Session Chair	***Prof Dr. Bhawani Shankar Chowdhry***		
Session Co-Chair	***Prof. Dr. Shoab Ahmad Khan***		
02:00PM-02:20PM	**Invited Talk By** *Prof. Dr. Shoab Ahmad Khan (NUST, Islamabad, Pakistan)*		
	Topic: ***"Innovation and Future Trends in Information and Communication Technology (ICT)"***		
02:20PM-02:30PM	***Paper id17: "Electronic-Nose"*** *by Syed Haris Bin Hafeez, Huma Rizvi, Riyam Sarfaraz, Syed Muhammad Umer and Muhammad Aali Siddiqui*		
02:30PM-02:40PM	***Paper id24: "Cloud Based Final Year Project System "*** *by Syed Muhammad Waqas Haider, Adil Soomro, Komal Shahbaz, Shaikh Muhammad Hamza Ahsan and Muhammad Nassem Muhammad Shamim*		
02:40PM-02:50PM	***Paper id115: "Reliable Image Notifications for Smart Home Security with MQTT"*** *by Sajid Nazir, Muhammad Kaleem.*		
02:50PM-03:00PM	***Paper id05: "Insurematic – (Bringing Evolution in the world of Automobiles' Insurance with the help of Telematics and Usage-Based Insurance combined.)"*** *by Mohammad Kashif Shaikh, Huzaifa Juzer, Muhammad Hameez Khan, Yumna Iqbal, Munazzah Siddiqui and Sellappan Palaniappan*		
03:00PM-03:10PM	Q/A session		
03:05PM-03:20PM	Token of Appreciation by Session Chairs		
03:20PM-03:30PM	Networking		

Sat, Mar 09th	**02:00 - 03:30**	**UBIT Auditorium**	**Parallel Session - III**
Session Moderator	***Ms. Dur-e-Shawar Agha***		
Session Chair	***Dr. Bhagwan Das***		
02:00PM-02:15PM	***Paper id92: " Modeling Middleware Platform for Supporting Active Communication between IOT Devices"*** *by Marwan Najm Fakhri, Khairun Nidzam Ramli, M.F.L Abdullah, Khaldoon Ammar Omar, Abdullah Ali Qasim and Hassan Muwafaq Gheni*		
02:15PM-02:25PM	***Paper id93: " Data Rate and BER Analysis for Optical Attocells configuration Model in Visible Light Communication "*** *by M.S.M Gismalla, M.F.L Abdullah, Bhagwan Das, Wafi A Mabrouk and Mussaab. I Niass.*		
02:25PM-02:35PM	***Paper id94: " Visible Light Communication the next Future Generation System"*** *by Abdullah Ali Qasim, M.F.L Abdullah, Rahmat Talib, Hassan Muwafaq Gheni, Khaldoon Anmar Omar and Anas Malik Abdulrahman.*		
02:35PM-02:45PM	***Paper id08: "Hybrid Automated Test Generation Tool (HATG) "*** *by Huzefa Fakhruddin, Khurram Nawaz Kiani and Farheen Qazi.*		
02:45PM-02:55PM	***Paper id9:. "Simulation of Undersea Optical Communication System using DCF and SSF"*** *by Hassan Muwafaq Gheni, M.F.L Abdullah, Khaldoon Ammar Omar, Anas Malik Abdulrahman, Abdullah Ali Qasim, Marwan Najm Fakhri and Bhagwan Das.*		
02:55PM-03:05PM	Q/A session		
03:15PM-03:25PM	Token of Appreciation by Session Chairs		
03:25PM-03:30PM	Networking		

Sat, Mar 09th	**03:30 - 05:00**	**ICCBS Auditorium**	**Parallel Session - IV**
Session Moderator	***Ms. Humera Bashir***		
Session Chair	**Prof. Dr. Jonathan Andrew Ware**		
Session Co-Chair	**Prof. Dr. Engr. Syed Hyder Abbas Musavi**		
03:30 PM-03:40PM	***Paper id41:*** **"Orchestrating Heterogenous Communities using Middleware Approach"** *by Sadia Mughal, Fahad Razaque, Muhammad Raheel Hassan and Mukesh Malani.*		
03:40PM-03:50PM	***Paper id20: "A survey on technology supported collaborative learning Tools & techniques in teacher education."*** *by Nisar Ahmed Dahri, Dr. Muhammad Saleem Vighio and Dr. Mir Hassan Dahri.*		
03:50PM-04:00PM	***Paper id30: "Collaboration of Virtual Reality in Our Professional Life"*** *by Kiran Saleem, Hadia Saadi, Maria Iqbal, Arooba Fatima and Rabia Enam.*		
04:00PM-04:10PM	***Paper id59: "Virtual Tourism Using Samsung Gear VR Headset"*** *by Mahnoor Qadri, Muhammad Shah Hussain, Shafaq Jawed and Syed Atir Iftikhar.*		
04:10PM-04:25PM	Q/A session		
04:25PM-04:40PM	Token of Appreciation by Session Chairs		
04:40PM-05:00PM	Networking		

Sat, Mar 09th	**03:30 - 05:00**	**L. E. J Lecture Hall - A**	**Parallel Session - V**
Session Moderator	***Mr. Hussain Saleem***		
Session Chair	***Daniel Ortiz-Arroyo***		
Session Co-Chair	***Prof. Dr. Tariq Rahim Soomro***		
03:40PM-03:50PM	***Paper id21: " Fire Detection System using Raspberry Pi "*** *by M. Noman Aqeel Khan, Talha Tanveer, Kiran Khurshid, Hassan Zaki and Syed Sajjad Imam Zaidi.*		
03:50PM-04:00PM	***Paper id32: " TALEM (The Advanced Learning and Education Management) System With OBE (Outcome-based Education) "*** *by Tauseef Mubeen, Syed Khawar Hussain and Fizza Aqeel.*		
04:00PM-04:10PM	***Paper id42: "Object Recognition for Dental Instruments using SSD-Mobile Net"*** *by Hashir Ali, Mahrukh Khursheed, Syeda Kulsoom Fatima, Syed Muhammad Shuja and Shaheena Noor.*		
04:10PM-04:20PM	***Paper id46: " Enhancement of Efficiency through Optimization of Cast Iron flywheel"*** *by Atif Saeed*		
04:20PM-04:35PM	Q/A session		
04:35PM-04:50PM	Token of Appreciation by Session Chairs		
04:50PM-05:00PM	Networking		

Sat, Mar 09th	**03:30 - 05:00**	**UBIT Auditorium**	**Parallel Session - VI**
Session Moderator	***Ms. Farheen Qazi***		
Session Chair	***Dr. Bhagwan Das***		
03:40PM-03:50PM	***Paper id98: "Radio Over Fiber (RoF) Implementation using MZM for Long Distance Communication"*** *by Hassan Muwafaq Gheni, M.F.L Abdullah, Khaldoon Ammar Omar, Anas Malik Abdulrahman, Abdullah Ali Qasim and Marwan Najm Fakhri.*		
03:50PM-04:00PM	***Paper id29: " IOT based Advance Advertisement Smart Screen (AASB) controlled with android application "*** *by Engr Mr. Muhammad Imran Saleem, Uzair Ibrahim, Zain Aijaz, Muhammad Shaiq Ur Rehman.*		
04:00PM-04:10PM	***Paper id25: "NFA Based Formal Modeling of Smart Parking Systsem Using TLA"*** *by Saba Latif, Aniqa Rehman and Nazir Zafar*		
04:10PM-04:20PM	***Paper id26: " Formal Modeling of Smart office using Activity Diagram and Non Deterministic Finite Automata"*** *by Aniqa Rehman, Saba Latif, Nazir Zafar*		
04:20PM-04:30PM	Q/A Session		
04:30PM-04:40PM	Token of Appreciation by Session Chairs		
04:40PM-04:50PM	Networking		
04:50PM-05:00PM	Transit		

Sat, Mar 09th	**05:10 PM**	**Hi Tea**

Day 2			
Sun, Mar 10th	**09:30-10:55**	**ICCBS Auditorium**	**Plenary Session - II**
Session Moderator	***Dr. Jamal Hussain***		
09:30AM-09:55 AM	**Keynote Address** by *Dr. Daniel Ortiz-Arroyo (Department of Energy Technology, Aalborg University, Denmark)*		
	*Topic: "**Applications of Machine Learning and Deep Neural Networks**"*		
09:55AM-10:20AM	**Keynote Address** by *Prof. Dr. D. M. Akbar Hussain (Associate Professor Department of Energy Technology, Aalborg University, Denmark)*		
	*Topic: **"Predicting important key player nodes in a network"***		
10:20AM-10:45AM	**Keynote Address** by *Prof Dr. Paulo P. Monteiro (Department of Electronics, Telecommunications and Information Technology Telecommunications Institute, Aveiro University, Portugal)*		
	*Topic: **" Joint of Reflectometry and Communication Systems for Beyond 5G."***		
10:45AM-10:55AM	**Invited Talk** by *Tahir Mehmood Chaudhry (Chief Executive, Falcon Engineering)*		
	*Topic: "**Digital Entrepreneurship Toward a Digital Technology Perspective of Entrepreneurship, Especially for Women.**"*		

Sun, Mar 10th	**11:00 11:30**	**Hi-Tea**

Sun, Mar 10th	**11:30 - 01:00**	**ICCBS Auditorium**	**Parallel Session - I**
Session Moderator	***Ms. Maryam Feroze***		
Session Chair	***Dr. Najeed Ahmed Khan***		
Session Co-Chair	***Dr. Faisal Ahmad Khan***		
11:30AM-11:50AM	***Invited Talk** by Dr.Faisal Ahmad Khan (Pro-Vice Chancellor, BUITEMS, Quetta, Pakistan.)*		
	*Topic: **"A look at fruits and minerals with deep learning methods"***		
11:50AM-12:00AM	***Paper id49:" Futuristic Short Range Optical Communication: A Survey "** by Hussain Ahmad, Syed Muhammad Talha Gillani, Toheed Omer, Saleem Aslam, Taimur Hassan and Syed Umaid Ali*		
12:00PM-12:10PM	***Paper id 56: " A novel Ensemble Deep Belief Network and Bayesian Adaptive Aggregation for Regression "** by Dr. Saima Hassan, Mojtaba Ahmadieh Khanesar, Tariq Mohammad and Wali Khan.*		
12:10PM-12:20PM	***Paper id209: " An empirical study on practice of requirement engineering activities in Software Industries "** by Shahid Saleem*		
12:20PM-12:30PM	***Paper id57: "Application of Chaos in Cryptography: A Survey"** by Muhammad Usama, Safdar Ali, Asif Aziz and Muhammad Taha Jilani.*		
12:30PM-12:40PM	Q/A Session		
12:40PM-12:50PM	Token of Appreciation by Session Chairs		
12:50PM-01:00PM	Networking		

Sun, Mar 10th	**11:30 - 01:00**	**L. E. J LECTURE HALL A**	**Parallel Session - II**
Session Moderator	***Ms. Madiha Khurram***		

Session Chair	***Dr. D. M. Akbar Hussain***
Session Co-Chair	***Prof. Dr. Ghulam Ali Mallah***
11:30AM-11:50AM	***Invited Talk*** *by Prof. Dr. Ghulam Ali Mallah (SALU, Khairpur, Pakistan)*
	*Topic: "**A Framework for Network Security, Privacy and Adaptability Management through Software Agents**"*
11:50AM-12:00PM	***Paper id58: "Second Chance Page Replacement Algorithm with Optimal (SCAO)"*** *by Kiran Saleem, Maria Iqbal, Hadia Saadi, Farheen Qazi and Dur-E-Shawar Agha.*
12:00PM-12:10PM	***Paper id06: "Efficient Round Robin Algorithm using the Average Burst Time (ERRA)"*** *by Masroor Aijaz, Ramsha Tariq, Maheen Ghori, Syeda Wasma Rizvi and Farheen Qazi.*
12:10PM-12:20PM	***Paper id50: "Facial Recognition using Convolutional Neural Networks and Implementation on Smart Glasses"*** *by Suleman Khan, M. Hammad Javed, Ehtasham Ahmed, Syed A A Shah and Syed Umaid Ali.*
12:20PM-12:30PM	***Paper id210: "A Survey on Emerging Cloud Computing and Internet of Things"*** *by Sana Qabil, Urooj Waheed, Samia Masood Awan, Yusra Mansoor and Muhammad Ahsan Khan*
12:30PM-12:40PM	Q/A Session
12:40PM-12:50PM	Token of Appreciation by Session Chair
12:50PM-01:00PM	Networking

Sun, Mar 10th	**11:30 - 01:00**	**UBIT AUDITORIUM**	**Parallel Session - III**
Session Moderator	***Ms. Urooj Waheed***		
Session Chair	***Dr. Muhammad Naseem***		
11:30AM-11:40AM	***Paper id89: "Design of Experiment for microporous Sound Absorption Composites"*** *by Hanani Abdul Wahab, Anika Zafiah M. Rus, M.F.L Abdullah and Nur Munirah Abdullah.*		
11:40AM-11:50AM	***Paper id91: "Simulation of Monorail Suspension System Model under different Driving Speeds"*** *by Wafi A Mabrouk, M.F.L Abdullah and Bhagwan Das*		
11:50AM-12:00AM	***Paper id87: "Wide Band Gap Thermoset Renewable Polymer Graphite (TPG) Composites"*** *by Nur Munirah Abdullah, Anika Zafiah M.Rus, M.F.L Abdullah*		
12:00PM-12:10PM	***Paper id99: "A Conceptual Framework for Determining Acceptance of Internet of Things (IoT) in Higher Education Institutions of Pakistan"*** *by Humaiz Shaikh, Ali Raza, Zulfikar Ahmed Mahar, Mohammad Shadab Khan and Asadullah Shah*		
12:10PM-:20PM	***Paper id96: "Enhancement of FSO Range for FSO Ground to Train Communications Link using Multiple Transmitters Concept"*** *by Wafi A. Mabrouk, M.F.L Abdullah and M.S.M Gismalla.*		
04:20PM-04:30PM	***Paper id88: "Dynamic Mechanical Properties of Biopolymer Blended with HDPE"*** *by Nurulsaidatulsyida Sulong, Anika Zafiah Mohd Rus and Nurul Syamimi M.Salim.*		
04:30PM-04:40PM	***Paper id90: "Mechanical Analysis of Polyurethane and Polyurethane Graphite Thin Film Composites"*** *by M. Saddam Kamarudin, Anika Zafiah M.Rus and M.F.L Abdullah*		
04:40PM-04:50PM	***Paper id95: "Leakage Current in Eyes of Infrared Thermography"*** *by M. Riduan, M. Shariff, M.F.L Abdullah and M Yusop A Latiff*		
04:50PM-05:00PM	Token of Appreciation by Session Chairs		

Sun, Mar 10th	**01:00 - 02:00**	**Lunch & Namaz Break**

Sun, Mar 10th	**02:00 - 03:40**	**ICCBS Auditorium**	**Parallel Session - IV**
Session Moderator	***Ms. Shaista Rais***		

Session Chair	***Prof. Dr. Muhammad Shahab Siddiqui***
Session Co-Chair	***Dr. Imdad Khan***
02:00 PM-02:20PM	**Invited Talk** by *Dr. Imdad Khan (Associate Professor, COMSATS, Pakistan)*
	Topic: ***"Body-Centric Wireless Communications: Trends and Challenges"***
02:20PM-02:30PM	***Paper id38: "A Comparative Study of Similarity and Centrality Measures for Friends Recommendation "*** *by Maria Rahim, Afshan Ejaz, Quratulain Rajput and Shakeel Ahmed Khoja.*
02:30PM-02:40PM	***Paper id86: "Analysis of SWIPT based Relaying Network "*** *by Aamir Ali, Asim Ur Rehman Khan, Haider Mehdi and Zakir Hussain*
02:40PM-02:50PM	***Paper id114: "Low Complexity Object Detection with Background Subtraction for Intelligent Remote Monitoring "*** *by Sajid Nazir, Hassan Hamdoun, Mohammad Kaleem*
02:50PM-03:00PM	***Paper id51: " Smart Jacket for Coal Miners in Pakistan"*** *by Ali Sufeeyan Ahmed, Ahsan Malik and Syed Sajjad Imam.*
03:00PM-03:15PM	Q/A Session
03:15PM-03:30PM	Token of Appreciation by Session Chairs
03:30PM-03:40PM	Networking

Sun, Mar 10th	**02:00 - 03:40**	**L. E. J LECTURE HALL A**	**Parallel Session - V**
Session Moderator	***Mr. Khalid Jamal***		
Session Chair	***Dr. Engr. Muhammad Amir***		
Session Co-Chair	***Dr. Engr. Bhagwan Das***		
02:00PM-02:20PM	**Invited Talk** by *Dr. Engr. Bhagwan Das (Assistant Professor, QUEST, Pakistan)*		
	Topic: ***"Design and Development of Different Innovation Using Modern Multiprocessor System-on-Chip (MPSoCs)"***		
02:20PM-02:30PM	***Paper id07: "Adoption of VR influencing AI on 3D objects"*** *by Ghulam Yazdani, Farheen Qazi and* Dr. Sadiq Ali Khan		
02:30PM-02:40PM	***Paper id12: "Smart Mart System using Magento and Beacon Sensors "*** *by Maryam Mairaj, Aneeq Ur Rehman and Dur-E-Shawar Agha.*		
02:40PM-02:50PM	***Paper id55: "Simulation based Vehicle to Vehicle and base station communication"*** *by Rashid Ali and Dil Nawaz Hakro*		
02:50PM-03:00PM	***Paper id 39: " Investigation of a Brain Cancer with Interfacing of 3-Dimentional Image Processing"*** *by Soobia Saeed, Afnizanfazal Bin Abdullah*		
03:00PM-03:15PM	Q/A Session		
03:15PM-03:30PM	Token of Appreciation by Session Chairs		
03:30PM-03:40PM	Networking		

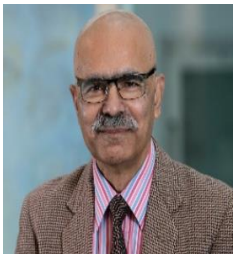
Sun, Mar 10th	**03:40-04:00**	**ICCBS Auditorium**	**Panel Discussion**
Session Moderator	**Engr. Parkash Lohana**		
03:40PM-03:45PM	**Conference Review by International Delegates**		
03:45PM-03:50PM	*Review 1*		
03:50PM-03:55PM	*Review 2*		

Sun, Mar 10th	04:00-05:00	ICCBS Auditorium	Closing Ceremony
Session Moderator	***Ms. Samia Masood Awan***		
04:00PM-04:05PM	Recitation of Holy Quran		
04:05PM-04:10PM	Naat-e-Rasool-e-Maqbool (S.A.W.W)		
04:10PM-04:15PM	**Address by Prof. Dr. Tabassum Mahboob**		
	Conference Co-Chair & Dean Faculty of Science, UoK.		
04:15PM-04:20PM	**Concluding Remarks by Dr. M. Sadiq Ali Khan**		
	Conference Secretory & Chairman, Department of Computer Science, UoK		
04:20PM-04:30PM	**Address by Prof. Dr. Muhammad Ajmal Khan**		
	Conference Chair & Vice Chancellor, University of Karachi.		
04:30PM-04:40PM	**Address by Chief Guest**		
04:40PM-04:50PM	**Token of Appreciations**		
04:50PM-05:00PM	**Vote of Thanks** by Dr. Jamal Hussain		

Sun, Mar 10th	05:00 PM	Hi-Tea

KEYNOTE SPEAKER

Dr. D. M. Akbar Hussain



Topic : " Predicting important key player nodes in a network ."

Profile

Dr. D. M. Akbar Hussain is working as an associate professor in the department of Energy Technology, Aalborg University Denmark. He holds a PhD degree in Control Engineering from the Faculty of Engineering and Applied Sciences (EAPS), University of Sussex ENGLAND, more specifically, in the field of state estimation / Tracking and its implementation on multi-processor systems. The main focus of his research is related with computer and control engineering. He has made contributions in several energy related areas for example; PV integration with grid and security issues related with grid communication network, energy efficient hardware design and design of control to get maximum power from a wind turbine. He has the experience of working in three continents (ASIA, EUROPE and NORTH AMERICA) with different cultural heritage and feels proud in adapting to these environments adequately.

Abstract

Analysis of social networks is quite commonly performed to understand the behavior of nodes in the network. The nodes represents various things symbolically that may be a person or a group of persons, events, areas or organizations etc. Therefore, in reality, these nodes could represent anything, the notable thing is that these nodes has certain capability and obviously have attributes. Analysis of social network (SN) is quite challenging, as it is a multi-dimensional task due to multi-model & multi-link problem. Typically, social network model is represented by a graph data structure. However, one can see the problem of representing by a graph data structure for larger social networks, it can be quite complex and potentially it is hard to see or understand the various important details about the relationships between different nodes. However, by various analytical methods we can find relationship dependencies, role of different nodes and their importance in the social networks. In this research we analyze a network and apply our novel attribute based technique to locate and highlight a passage of nodes which could be the important key players in the network.

Daniel Ortiz-Arroyo

Topic : " Applications of Machine Learning and Deep Neural Networks."

Profile

Daniel Ortiz-Arroyo is an Associate Professor of Aalborg University, Aalborg. He is Assistant Professor, Aalborg University, Denmark, 2003-2004. He has done Ph.D. in Computer Engineering, Oregon State University, USA, 2000. He has done his M.Sc. in Computer Science and Engineering, Mexico, 1989. His areas of research are Vision based navigation in UAVs, Machine Learning and Artificial Intelligence, Big Data, Information Retrieval, Social Networks, Security and Computer Architecture. He is a Senior Member IEEE (Computational Intelligence and Robotics System Society) and an Honorary member of the National System of Researchers, Mexico. He has over 80 peer-reviewed books, book chapters, journal and conference publications.

Abstract

The applications of machine learning have increased significantly in the last years. Supervised machine learning techniques are being applied in an increasing number of domains such forecasting, computer vision, speech recognition, text processing, and big data analytics, among other areas. In this talk, we will discuss how we have applied machine learning techniques in some of these domains and discuss in detail the application of shallow and deep neural networks in time series forecasting and computer vision. We will discuss the similarities and differences between these approaches and the future development in these areas.

Prof. Dr. Jonathan Andrew Ware

Topic : " Neural Networks: A Brief History and Futuristic Glance."

Profile

Andrew is Professor of Computing at the University of South Wales in the United Kingdom. As Professor in Computing, Andrew is engaged in both teaching and research.

He is currently supervising eight PhD students and leading on a number of initiatives with local companies. Previously, Andrew has supervised over thirty PhD students and has lead on collaborative projects both within the UK and Europe. His main research interest is the application of AI techniques to help solve real world problems.

Beyond the University, Professor Ware is currently working as external examiner in Computing for Bangor and Birmingham Universities. In terms of international work, Professor Ware has lectured in many parts of the world including Singapore, Hong Kong, China, the United States of America, and Canada. Andrew is also Regional Director for Technocamps, an innovative and dynamic initiative aimed at stimulating interest in computing and its cognate disciplines amongst young people.

Abstract

Neural Networks are one of a suite of artificial intelligence techniques that have helped project Artificial Intelligence to the forefront of computational development. However, while Neural Networks have been applied successfully to help solve a wide range of real world problems their use has generated a reasonable amount of controversy. They are in essence black box in nature and when utilized with Big Data sources that are not always representative of the 'complete picture' can result in unintended consequences.

M.F.L Abdullah

Topic : "Optimization and illumination of Indoor Visible Light Communication Using Optical Attocells Layout."

Profile

Currently, Professor at University Tun Hussein Onn, Malaysia Department of Communication Engineering

Abstract

Visible light communication (VLC) is deemed as a promising technology for future of indoor cellular coverage due to the valuable features such as unlicensed free spectrum, great bandwidth, high security and low power consumption. The investigation of illumination intensity, SNR and optical received power in a confine room is crucial. Therefore an optical attocells configuration with LEDs array distribution mounted on the ceiling is proposed to offer uniform communication and illumination distribution. Initial results showed that the proposed attocells configuration improved the maximum illumination and illumination intensity at the center of the room with average difference ratio of 10% and 14% respectively. The optical received power and SNR distribution are significantly improved based on semi-angle at half power and FOV respectively. Beside the proposed optical attocells configuration was consumed less transmission power and saved 13.2% from the total transmitted power used before.

Dr. Fakhrul Hazman Yusoff

Topic: " Gamification of Alumni Management System "

Profile

Dr. Fakhrul Hazman Yusoff is a senior lecturer in Faculty of Computer and Mathematical Sciences, Unversiti Teknologi MARA (UiTM). He is also appointed as Visiting Full Professor at Southern University, Baton Rouge, Louisiana. Being a recepient of US-Asean Fulbright Visiting Scholar for 2017/2018, he graduated with B.Sc. (Management – Information System) from Case Western Reserve University, Ohio, USA (1998). He earned his M.Sc. (Information Technology) from Universiti Putra Malaysia, Malaysia (2001) and obtained his Ph.D in Computer Graphics (2010) also from Universiti Putra Malaysia, Malaysia. His Ph.D work was "Modelling of head movement during facial expression". His research interest includes computer graphics, gamification and game development. He leads an entity known as Spatial Visual Analytics Group (SVAG). The group focuses on enriching life via graphics and multimedia. Among the projects he initiated include "The Enjoyment Design of Augmented Reality Based Gamification for Learning Environment" (current PhD student grant), "Sound Visualization as a tool for anxiety alleviation during Waiting Room environment" (2015), "Quranic-Based Sound-Induced Visualization" (2013) and "Emotional Conditioning Sound-Induced Visualization" (2013). In term of administrative post he used to hold positions at UiTM Office of Information Technology (Infotech) between 2010-2016 and UiTM Institute of Leadership and Development in 2017. Overall he is always on the look-out to leverage the knowledge he acquired through-out his 17 years of working experiences for the betterment of society in general.

Abstract

Managing an alumni is akin to managing a loyalty system. Having a strong an inclusive alumni benefit its member in various forms such as in term of financial as well as know-how support. It is pertinent for its management system to be optimized that the members felt they are accepted in the community and have the desire to contribute back enhancing its strength. Gamification is an approach that can be used to implement the alumni management system.By definition, Gamification is the application of game-design elements and game principles in non-game contexts. In the context of alumni management system, gamification will infuse game element inside the managemet system so that the user will feel motivated to use it without solely relying in limited individuals to manage it.The presentation will look at the features of alumni management system and how gamification can be infused into it so that it will encouraged dynamic autonomous growth without having to rely to much on the specific maintainers.

Prof. Dr. Bhawani S. Chowdhry

Topic : " Taking the lead for living in the digital age perfection "

Profile

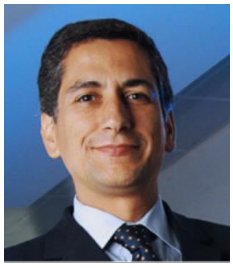
He is Distinguished National Professor and the Dean Faculty of Electrical Electronics and Computer Engineering at Mehran University of Engineering & Technology, Jamshoro, Pakistan. He did his PhD from renowned School of Electronics and Computer Science, University of Southampton, UK in 1990. He is having teaching, research and administration experience of more than 35 years. He has the honor of being one of the editor of several books "Wireless Networks, Information Processing and Systems", CCIS 20, "Emerging Trends and Applications in Information Communication Technologies", CCIS 281, "Wireless Sensor Networks for Developing Countries", CCIS 366, "Communication Technologies, Information Security and Sustainable Development", CCIS 414, published by Springer Verlag, Germany. He has also been serving as a Guest Editor for special issue "Wireless Personal Communications" Springer International Journal. He has produced more than 13 PhDs and supervised more than 50 MPhil/Masters Thesis in the area of ICT. His list of research publication crosses to over 60 in national and international journals, IEEE and ACM proceedings. Also, he has Chaired Technical Sessions in USA, UK, China, UAE, Italy, Sweden, Finland, Switzerland, Pakistan, Denmark, Spain and Belgium. He is member of various professional bodies including: immediate past Chairman IEEE Karachi Section, Region10 Asia/Pacific, Fellow IEP, Fellow IEEEP, Senior Member, IEEE Inc. (USA), SM ACM Inc. (USA).

Abstract

Unlike other great innovations that propelled humankind to greater heights, the internet, combined with advances in computational powers, has profoundly altered human behaviors. We live in a connected world where new technologies are bringing benefits to all of us- in academia, teaching, research, industrial applications, agriculture, as individuals, communities, businesses and so on. Use of social media based to stay in touch can have a major impact on reducing social isolation and loneliness and can enrich and enhance people's lives. The digital revolution and all that came with it – the internet and connected devices – is arguably the most disruptive technological shift in human history.

This disruptive quality of digital technology goes right to the core of what it means to be human. Cybercrime, personal information theft is a growing threat. Now the million dollar question comes to mind - are we taking required steps to overcome these changing scenario in Pakistan? I feel that proper guidance and education may help increase confidence and safety when navigating today's online world. It's important to educate all Pakistanis because new technologies bring new issues of managing personal information, privacy and security.

Dr. Paulo P. Monteiro



Topic : " Joint of Reflectometry and Communication Systems for Beyond 5G "

Profile

Paulo P. Monteiro received the diploma "Licenciatura" in Electronics and Telecommunications Engineering from the University of Aveiro in 1988, the M.Sc. in Electronic Engineering, from the University of Wales UK, in 1990 and the Ph.D. in Electrical Engineering, from the University of Aveiro, in 1999. Presently, he is Associate Professor at the University of Aveiro and Researcher at the Instituto de Telecomunicações. From October 2002 until March 2007 he was at Siemens S.A, Portugal as a Head of Research of Optical Networks. From April 2007 until December 2009 he was at Nokia Siemens Networks (NSN) Portugal as a Research Manager at Transport, Aggregation and Fixed Access and from January 2010 until June 2012 as a R&D manager of Network Optimization unit at NSN. From July 2012 until May 2013 he was research Manager at NSN Portugal. In May 2013, the Optical Networks business unit of Nokia Siemens Networks began operating as a new company Coriant where he left in June 2013. In 1992, he joined the Department of Electronic and Telecommunications Engineering of University of Aveiro and the Optical Communications Group of Institute for Telecommunications as an Assistant Professor and Researcher, respectively. In 1999, he became an Auxiliary Professor at the University of Aveiro and he was promoted to Associate Professor in 2005. His main research interests include Optical Communication Networks, Microwave Photonic and Electronic Subsystems. He tutored and co-tutored successfully more than 14 PhD's, having participated in more than 28 projects (national, and international). He was the coordinator of a CELTIC project OPTRONET and a large-scale integrating project FUTON (FP7 ICT-2007–215533). He has authored/co-authored more than 18 patent applications and over 100 papers in journals and 360 conference contributions. He has been TPC member of ECOC and Senior Member of IEEE.

Abstract

The explosive growth of data traffic coupled with the explosion in the number of reflectometry systems (including Radars and LiDARs) foreseen for the coming years will provide new challenges. Apart from the cost and size reduction, and improved spectrum efficiency, the integration of both technologies brings further benefits. Namely, the communication domain complements the Radar/LiDAR domain information to enable the formation of higher resolution scene imagery, and the reflectometry domain is instrumental for the establishment, coordination and maintenance of a high capacity communication link through the effective use of the space domain. For example, the advantages of merging these two technologies such as cooperative beam alignment, tracking capabilities and image resolution enhancement with lower bandwidth by sharing the information of several reflectometry systems spatially distributed. The remaining bandwidth, not used for Radar and/or LiDAR imaging can be reutilized, for example, to alleviate the spectrum scarcity problem in sub 6GHz communication bands. The dual-functionality approach would allow intelligent transportation systems to simultaneously reap the benefits of autonomously sensing the driving environment (via reflectometry) and cooperatively exchanging information such as velocity, braking, and entertainment content among vehicles (via communication). Similarly, to the case of the intelligent transportation system, sensing and communication are also fundamental for the IoT paradigm, and therefore their unification will bring significant advantages for the Future of the IoT. The joining of reflectometry and communication systems as a Future Wireless Ecosystem will be addressed in this talk.

INVITED SPEAKERS

Dr. Engr. Bhagwan Das

Topic: " Design and Development of Different Innovation Using Modern Multiprocessor System-on-Chip (MPSoCs) "

Profile

Dr. Bhagwan Das received his PhD degree in Optical Communication from Department of Communication Engineering, Faculty of Electrical and Electronic Engineering, Universiti Tun Hussein Onn Malaysia (UTHM), Malaysia in OCT 2017. He succeed in achieving a patent and 8 copyrights for his research and innovation. Dr. Bhagwan Das is the recipient of BEST MAN INVENTOR 2016 award given by International Federation of Inventors Associations (IFIA), Geneva, Switzerland. He won COMMERCIAL AWARD given by Universiti Tun Hussein Onn Malaysia (UTHM) in 2016. He also received BEST INNOVATION AWARD from Malaysian Research & Innovation Society (MyRIS) in 2017. He has won seven gold medals in international innovative competitions held in different countries for his research work. He has presented his research and innovation work in Denmark, Sweden, Spain, France, Italy, Switzerland, Turkey, Dubia (UAE), Singapore, Malaysia, China, Cambodia, and in Vietnam. He has more than 10 years combined experiences of teaching and industry. He has published three book chapters with world's well known publisher i.e. Springer and IGI Global. He has published more than 40 articles in reputed ISI impact factor journals and in conferences having indexing in SCOPUS, ISI (Thomson Reuters/ Clarivate Analytics), EI compendex (Elsevier) and etc. He is member of professional bodies such as Pakistan Engineering Council, Pakistan Engineering Congress, Senior Member- IEEE (USA), IFIA (Switzerland), SCIEI (Hong Kong), IAENG (Hong Kong), Internet Society (USA), IRed USA. Dr. Bhagwan Das appointed as nominated International Program Committee member in ICOCI 2015 (ISI indexed conference), SCDS 2015, 2016 (Published by Springer). He has delivered several keynote speeches in international conferences and delivered more than 10 workshops related to Research and Innovation. Currently, he is working as Associate Professor in QUEST, Pakistan. His area of research includes optical system design, optical signal processing, UltraScale Technology, and energy efficient optical communication.

Abstract

The rapid growth in the advancements of Field Programming Gate Arrays (FPGAs) technologies is encountered nowadays. The shrinking of Chip size to 16nm and 20nm scaling from monolithic through 3D ICs combine new memory, and multiprocessing SoC (MPSoC) technologies to deliver a generation ahead of value. There are various innovations and applications of Multiprocessor System-on-Chip (MPSoCs) are being developed for PLC/HMI/Motion Control, Motor Control, Machine & Computer Vision, Video Surveillance, Telecommunication, Security, Industrial Networking and many more. Among these Multiprocessor System-onChip (MPSoCs) the UltraScale architecture is staying a generation ahead with an Extra Node of Value. In this talk, the key innovations and their design applications will be discussed for UltraScale (MPSoCs). The design applications and innovations using UltraScale technology for different themes related to Electronics and Computer Technology will be communicated with the audience. This talk will be of interest for the engineers, designers, scholars, academicians and technical persons working in the field of Electrical and Electronic Engineering, Computer Technology, Computer Networking, and related fields, to design their respective system using UltraScale technology.

Tahir Mahmood Chaudhry

Topic: "Digital Entrepreneurship Toward a Digital Technology Perspective of Entrepreneurship, Especially for Women"

Profile

Tahir Mahmood Chaudhry is Chief Executive, Falcon Engineering. He was Former Advisor-Consultant NCEAC at HEC Islamabad and a member of the advisory board, Usman Institute of Technology, Karachi. He is also the Director on Board of Cloud Security Alliance CSA Pakistan and the Founding Member & Chair Industry for Academia Linkage, Open Source Foundation of Pakistan.

He is the President of Career Development Association (Pakistan Chapter), Computer Society of Pakistan & CEO Falcon Consulting & Training. He is the Secretary General, Human Resources Forum and the President & CEO, Pakistan Institute of Entrepreneurship. He is the President of Pakistan Society of Security Professionals and Founder Member of Pakistan Information Security Association. He is also the Founding President of Turnaround Management Association, Pakistan Chapter. He is the Secretary of Cyber Security Task Force and the President of RIPHAH Advisory Council for Excellence. He is also Member of Corporate Advisory Council CUST, Islamabad.

Abstract

New digital technologies have transformed in such a way that the nature of uncertainty inherent in entrepreneurial processes and outcomes as well as the ways of dealing with such uncertainty. While considering 51% female population in Pakistan and out of which 65% is youth, women Entrepreneurship can change the world. The economists are predicting by 2030 Pakistan will be in top 5 Emerging Countries having great impact of Digital Entrepreneurship. By women Entrepreneurship, my emphasis is that our culture support women working from home or in a secure environment can be more benefitting towards the national prosperity. This has raised important questions at the intersection of digital technologies and entrepreneurship—on digital entrepreneurship. We consider two broad implications—less bounded entrepreneurial processes and outcomes and less predefined locus of entrepreneurial agency—and advance a research agenda that calls for the explicit theorizing of concepts related to digital technologies. In articulating the promise and value of such a digital technology perspective, we consider how it would build on and enrich existing entrepreneurship theories. The change in economy most probably will be by the digital economy by and large impacting the life style of the future youth and Humanity/Society at Large, which will make impact on Industry and Governance as well, directly as well indirectly.

Abubakr Muhammad

Topic: "Revolutionizing water and agriculture sectors in Pakistan using informatics, systems analysis and robotics."

Profile

Abubakr Muhammad is an associate professor of electrical engineering, the founding director of Center for Water Informatics & Technology (WIT), and the lead for NCRA National Agricultural Robotics Lab at LUMS. He received his PhD in Electrical Engineering in 2005 from Georgia Institute of Technology winning the Sigma Xi Best PhD Dissertation Award. He received masters degrees in mathematics and electrical engineering from Georgia Tech and was a postdoctoral researcher at University of Pennsylvania and McGill University. Since 2008, his research group at LUMS is doing applied research in robotics and cyber physical systems with applications to water, agriculture and sustainability issues. He serves on various advisory panels to government agencies and industry in Pakistan on water, climate and agricultural policy, specially on the use of emerging information and communication technologies.

Abstract

Regions around the world are facing rapid large-scale environmental changes brought about by climate change, demographic transitions, urbanization and disruptive technologies. In South Asia, the impact of these changes is felt most in the water sector in poor management of irrigation networks, depletion of groundwater, deterioration in water quality, poor sanitation and difficulties in preservation of ecosystems. Towards taming the hydrologic complexity of river basins, the speaker's group has developed and deployed robotics and automation solutions for water management and precision agriculture in the world's largest contiguous irrigation network in Pakistan. These include real-time flow monitoring systems, innovative schemes for demand-based irrigation delivery and the use of unmanned aerial vehicles (UAV) to inspect siltation of water channels. Recognizing simultaneously the strong coupling of human behavior with the natural systems, the speaker's group has developed game-theoretic socio-ecological models to investigate sustainability and environmentalism. In many instances, the effectiveness of these technologies has been demonstrated in scaling-up solutions to ensure transparency and effective governance.

Prof. Dr. Shoab Ahmad Khan

Topic: " Innovation and Future Trends in Information and Communication Technology (ICT) "

Profile

Dr. Shoab Ahmed Khan is Professor in college of Electrical & Mechanical Engineering, National University of Sciences & Technology. He is an inventor of 5 awarded US patents and has 260+ international publications. His book on Digital Design is published by John Wiley & Sons and is being followed in national and international universities. Dr. Shoab Ahmed Khan has more than 22 years of industrial experience in companies in USA and Pakistan. He has been awarded Tamgh-e-Imtiaz (Civil), National Education Award 2001 and NCR National Excellence Award in Engineering Education. He is the Chairman of Pakistan Association of Software Houses (P@SHA) and is a member of Board of Governance of many entities in the Ministry of IT and Commerce. He has also served as member of National Computing Council and National Curriculum Review Committee.

Abstract

The talk is titled, "Innovation and Future Trends in Information and Communication Technology (ICT)". ICT is an exciting area where as Pakistan we can quickly catch-up to the most advanced countries in the world. Our researchers need to know the latest trends in the filed of ICT and their relevance to knowledge economy for Pakistan. My talk would focus on these trends with examples from the work I have been involved over the years. Industry 4.0, Industrial Internet of Things (IIOTs), Communication and Networks, Software Defined Radios and Routers, ASICs and FPGA based designs, Artificial Intelligence and Machine Learning, Digitization, Social Media Analysis are some of these fields where we should learn the new trends and innovations in these areas. We should focus in learning modern tools and techniques in these fields, especially their applicability in solving real-life problems to bring comfort in the life of people, giving visibility and transparency in systems, decision aiding in optimization of resources. Solving local problems with global relevance is key to our success in moving Pakistan towards knowledge economy. The talk shall enumerate several examples where my team has used these techniques for crafting innovative solutions for solving local problems with global scope. There are several business opportunities that can be created around solutions to complex problems where these techniques come very handy. The talk shall also touch the basic ingredients in creating innovation and skills of marketing solutions based on these innovations.

Dr. Faisal Ahmad Khan

Topic: " A look at fruits and minerals with deep learning methods "

Profile

Faisal Ahmad Khan is the Pro Vice Chancellor at BUITEMS University Quetta. He is a Fulbright fellow, Momentum award recipient and Senior Member IEEE. He has received his Ph.D. degree in Electrical and Computer Engineering from the Georgia Institute of Technology, USA. He has been working with the Faculty of Information and Communication Technology at BUITEMS since October 2007.

Dr. Khan has worked with the Communications Systems Center (CSC) at Georgia Institute of Technology from Fall 2009 to Spring 2013. His research at CSC focused on Vehicular Ad hoc Networks under the title Safety-Message Routing in VANETs. His research work at Bahria University focused on Radio-Wave Propagation into Buildings and Client-Server Architecture for Cellular Handheld devices. Awards and distinctions to his credit include Fulbright Ph.D. scholarship award 2009-2013, outstanding leadership award IEEE Karachi section 2015, excellence in leadership award by World Confederation of Business, Houston, Texas, 2015; best teacher award BUITEMS 2008, Bahria University scholarship award 2006, and undergraduate distinction Bahria University 2005.

He has been invited speaker and session chair at a number of international IEEE conferences. More recently, he has been the conference chair of the IEEE ICE Cube Conference 2016. Besides professional undertakings, he is the founder of Quetta Going Green, a citizens' movement for the promotion of environmental awareness in the city of Quetta. He is also the founder of Honesty Mart, an initiative for the promotion of trust and honesty in the society.

Abstract

Using a deep learning model, we explore ripeness of fruits (watermelon as a base example). The model can predict the ripeness of a watermelon using image of the exterior of the sample. Empirical results show that the model provides accuracy of about 80% for common watermelon species in Pakistan. In another scenario, contents of a mineral ore are studied using a deep learning model. The model predicts with accuracy of about 60%. An interactive application of the two models is also presented that provides real life application for a user.

Dr. Imdad Khan

Topic: "Body-Centric Wireless Communications: Trends and Challenges."

Profile

Dr. Imdad Khan is an Associate Professor of Electrical and Computer Engineering at COMSATS, Abbottabad, Pakistan. He completed his PhD studies from COMSATS Institute of Information Technology, Abbottabad, Pakistan in 2009. His research Interests are Diversity and MIMO, Personal Area Networks, Antenna Design and measurement, Propagation Channel measurement and Characterization and 5G wireless communication technology. He has supervised many students in their MS/PhD researches.

Abstract

Body-Centric Wireless Communications: Trends and Challenges The advancement of intelligent, small sensors, microelectronics, integrated circuit and low power wireless communication has led us close to the deployment of body area networks. This has revolutionized the healthcare system by providing long- time continuous monitoring of patients and providing real time feedback to medical experts. A reliable Wireless Body Sensor Networks (WBSN) system depends on good understanding and in-depth analysis of wave propagation around and inside the human body. There is considerable ongoing research on antennas and propagation for body area networks. In this paper, we discuss the antennas and propagation issues for in-body and on-body communication with a special focus on channel modeling and wearable antenna design. The current standards for the WBAN and the relevant issues are discussed with focus on the current research dimensions.

Prof. Dr. Ghulam Ali Mallah

Topic : "A Framework for Network Security, Privacy and Adaptability Management through Software Agents."

Profile

Dr Ghulam Ali Mallah is currently working as Professor & Chairman Department of Computer Science at Shah Abdul Latif University, Khairpur Mirs. He was born on March 1, 1971 at Village Bozdar Wada District Khairpur. He did his Matriculation & Intermediate from Sukkur Board, Bachelors from SALU Khairpur, Masters from Quaid-e-Azam University, Islamabad, PhD in Computer Science through HEC Indigenous PhD Scholarship from FAST-Karachi & SALU Khairpur and Charles Wallace Fellowship (Post-doctorate) in Educational Technology & Academic Leadership from Glasgow University, Scotland, UK. He is member of various national & international academic forums/bodies including IEEE & ACM. Dr Mallah has visited more than a dozen countries to present his research work. He has about 40 HEC recognized national & international research articles at his credit. He has supervised dozen MS students & many MS/PhD scholars are enrolled under his supervision.

Abstract

Software Agents have been used as a technology in this research that autonomously roam around network. Software Agents are diversified research area that covers Artificial Intelligence, Programming Abstraction and Distributed Computing.

Considering profiling as the major source of identifying Insider Threat, an Agent-based Profiling model has been developed that considers an individual's personality profile to identify real personality in the cyberspace. Major indicators involving profile generation and personality identification have been argued and implemented. The model is implemented with JADE and .Net framework. Hence, the proposed solution of Profiling for Insider Threat will be integrated on the top of Agent technology to autonomously monitor and predict human behavior. As human behavior is difficult to predict, therefore monitoring through autonomous and intelligent behavior of agents is the key solution. The ACENET (Agent Collaborative Environment based on .NET), a FIPA-compliant agent framework for profiling, has been developed to achieve the task. The proposed Profiling Agent Framework allows identifying anomalies in user activities either online or offline. Online monitoring is carried out in real time that is used to catch the sensitive activity started by user against organization's policy. Offline monitoring is carried out on daily, weekly and monthly basis and is based on the analysis of specified factors.

The ACENET scores every user of the organization and maintains a detailed profile of whether a legitimate user is doing any malicious activity. ACENET is adaptable to deploy in any organization where agents are designed as service on the top layers of the model. The threats have been categorized in various classes and for each category, agents have been designed. Communication among agents takes place by message passing at upper level whereas internally socket based communication is underway. Considering privacy as a major concern, a matrix or grid of the trust levels 'trust grid' is designed where diverse access privileges are assigned to different level of the users to resolve conflict between users and organizations. The professional issues regarding privacy and activities monitoring, were studied and it is proposed that the organization may announce in advance what can be monitored and what cannot be monitored though a user monitoring policy.

The framework, ACENET, was tested on real data, obtained from the organizations, and the performance has also been evaluated on the basis of specified parameters. Framework's results were analyzed to match with the targeted objectives. Finally future directions for the extension of the framework have been presented.

PAPER ABSTRACTS

Paper Id: 3

Emotion Recognition Through Voice Patterns Featuring Python

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Abstract

It's 2018, the world is moving towards globalization at a rapid space and it's stressing the requisite for the advancement of human computer interaction methods. A notable application of emotion recognition system occurs in the domains of telephonic communications specifically in call centers for analyzing and understanding the user's moods and reacting accordingly. In many applications, emotion recognition serves as an effective tool in providing feedback information to recognize the human emotional state. This paper introduces Emotion Recognition System (ERS), a prototype which recognizes emotions in provided audio. For this purpose, speech features such as MFCC, pitch, tempo are extracted from speech utterances. The Support Vector Machine and Random Forest are used as a classifier to classify three emotions selected from Berlin Emotional Dataset (EmoDB) as well as custom-made dataset The SVM classifier with linear kernel reaches 90% classification accuracy on EmoDB and Random Forest reaches 78% accuracy on custom-made dataset.

Paper Id: 5

Insurematic – (Bringing Evolution in the world of Automobiles' Insurance with the help of Telematics and Usage-Based Insurance combined.)

MOHAMMAD KASHIF SHAIKH[1], MUNAZZAH FATIMA SIDDIQUI[2], HUZAIFA JUZER[3], YUMNA IQBAL[4], MUHAMMAD HAMEEZ KHAN[5], SELLAPPAN PALANIAPPAN[6]
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Abstract

Our study is concerned with analyzing how implementing UBI programs on customers' sensor based data can help insurance companies to determine drivers' driving behavior alongside benefiting the customers i.e enhanced life security and lessened accidental risk. The history of UBI dates back to the time when the idea of pricing schemes based on lump sum premiums was criticised. To eradicate this, insurance companies started to rely on a set of variables describing a vehicle's type, usage and drivers' driving info in order to differentiate premiums for high and low risk drivers but this method of calculating premiums got obsoleted due to its purely declarative nature. Soon after when vehicles started to get manufactured with built-in OBD-II ports in them the idea of using this phenomena to determine driver's performance came into light and this is how the concept of Telematics formulated where a method of monitoring a vehicle by combining a GPS system on OBD-II was introduced, but the data, insurers were getting from Telematics solution was not meant to be displayed to customers whereas with Insurematic each and every detail is supposed to be revealed to its customers and upon performing analysis on that data the behavior of driver can also be determined. The technology is based upon IoT since it involves communication with internet and is a part of IoT domain. Although UBI is not only about maintaining a driving portfolio there are many other factors like data collection, management, vehicle to vehicle communication and storage capabilities and accurate working of predictive models to take insightful actions are involved to implement it effectively.

Keywords — OBD-II (On-Board Diagnostic), UBI (Usage-Based Insurance), Telematics, IoT (Internet of Things)

Paper Id: 6

Efficient Round Robin Algorithm using the Average Burst Time (ERRA)

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Abstract

One of the most essential operations performed by operating system is CPU scheduling. Although there are different algorithms available for CPU scheduling but amongst them RR (Round Robin) is considered as best in time shared environment. The choice of time quantum has a huge effect on its effectiveness. A new CPU scheduling algorithm, named as ERRA (Efficient Round Robin Algorithm) has been proposed in this research paper. Instead of static TQ (Time-Quantum), it uses dynamic TQ (Time-Quantum) in ERRA. The performance of both the algorithms (i.e., ERRA & RR) are experimentally compared. The results of ERRA presented in this research paper shows better performance in terms of average-waiting-time, average-turnaround-time and context-switching.

Keywords — Round Robin (RR), CPU Scheduling, Waiting Time, Time Quantum and Turnaround Time.

Paper Id: 7

Adoption of VR influencing AI on 3D objects

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Abstract

The advent of new technologies has made it possible for new areas to be explored in the gaming industry. Virtual Reality has progressed at an exponential rate which has allowed it to be used in many industries. Virtual Reality allows users to be immersed in a highly detailed environment which allows for a more realistic experience. This paper outlines the development of a game with a synopsis based on the military operation Zarb e Azab in Pakistan, and the integration of virtual reality gaming Oculus and Leap Motion device in the gameplay, The Leap Motion is used to recognize hand gestures while Oculus will serve as the visual medium for the user. The game itself has been designed and developed on the Unity 3D gaming engine. This project endeavors to highlight the importance and diverse application of VR in various industries. The distinctive integration of Oculus, Leap and PC leads to a realistic gaming experience intended to highlight the difficulties and hardships faced by the armed forces of Pakistan.

Keywords — Virtual Reality, Oculus Rift, Leap Motion, Unity 3D, Operation Zarb e Azab, Immersive Gaming.

Paper Id: 8

Hybrid Automated Test Generation Tool (Hatg)

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Abstract

Testing is the primary mode to ensure that the software is defect free and demonstrate high level of reliability. Testing constitutes the critical aspect of software development process which also considered being contributory in realizing the quality goals along with software quality assurance function. We have two types of basic testing techniques; Static and dynamic testing that are used for detecting defects in software product. It is challenging to automate testing phase of the software product which includes both type of testing in a single solution according to the relation they have to each other. We have number of tools available for automated static testing (mainly unit testing) which depends upon random testing inputs independent of external interfaces of the method under test. We also have dynamic testing tool which take inputs from user and apply to the system and matches with user entered output to check whether system has quality output.

We have developed a tool named "Hybrid automated test generation tool" that produces test suite automatically with high code coverage. It performs dynamic program analysis using dynamic emblematic execution in order to identify test inputs for created unit tests. By using execution path traces, it learns the behavior of program. HATG uses constraint solver for generating new inputs for different program behavior. We have applied HATG to a server based application written in .NET and found multiple errors including serious issues.

We used both type of testing techniques, static and dynamic testing, so that it can create concrete number of inputs with highly coverage area. Our results show that it is more effective for applications that are developed for backend processing and which should be capable of handling any types of data for processing.

Keywords — HATG; Static Testing; Dynamic Testing; Software Testing; Software reliability; automated testing.

Paper id: 12

Smart Mart System Using Magento and Beacon Sensors

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Abstract

Abstract— Now a days the marts are increasing day by day and many people prefer marts for shopping as they will get all the required items under one roof. The biggest problem people face in these marts is to find their desired products and after that they have to wait in a long queue for billing. We have a provided solution for these two problems and design a system for those who do not like to stay stand in a checkout-line. Customers will use our Smart cart app and activate app in their phones while entering the store. We have figured out the solution for the problem to search out the required items on an eye blink. The solution of this problem is such navigation system that navigates the location of particular item or items. It also shows map of the Store through beacon sensors (IOT) on your phone. We added a feature of ads and promotions to enhance the sale and shopping experience. By Artificial Intelligence, we maintain the inventory levels and provide predictive analysis of seasonal items. This paper provide intimation, applications and sustainability within the manufactures, and in other manufactures included are also the outcomes of a survey organized within management of a Walmart store and Amazon Go.

Keywords — Smart Cart, Magento, Beacon sensors, Sqlyog , MySQL, Andriod app.

Paper Id: 17

Electronic-Nose

SYED HARIS BIN HAFEEZ[1], HUMA RIZVI[2], RIYAM SARFARAZ[3], SYED MUHAMMAD UMER[4], MUHAMMAD AALI SIDDIQUI[5]
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Abstract

Smell is one of the six senses of human beings and there is not a lot of work on that sense, therefore, this paper is based on that sense. It aims to develop Electronic Nose (E-Nose) that will work not only to determine the ripeness level of fruits but also to make prediction that how long they will remain in that particular stage and also the classification of fruits as well, through smell. In order to achieve that K-Nearest Neighbors (KNN) algorithm is used. Hardware components include ME3-C2H4 sensors, Raspberry pi 3. The researchers work almost 10 hours daily to get the dataset of ethylene gas as accurate as possible. The dataset will then be used in KNN algorithm for classification (to determine the name) & categorization (to determine the ripeness level) of fruits. On the basis of experiments the success rate of this system is 70%.

Keywords — Classification of fruits; Categorization of ripeness level; KNN (K-Nearest Neighbor).

Paper Id: 20

A survey on technology supported collaborative learning Tools & techniques in teacher education

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Abstract

Collaborative learning is a well-known teaching and learning approach that engages learners in pairs or groups for achieving a common learning goal. This approach is widely used, researched and advocated in the context of teacher education. The effective use of collaborative learning in teachers' training creates an active learning environment by exchanging the ideas within groups and builds a strong interpersonal, leadership, problem solving skills and decision making. In the 21st century collaborative learning has been supported through wide range of tools and technologies like computer, mobile, internet and web-based and other related technologies. These technologies extend the use of collaborative learning beyond the classroom teaching and learning. The main aim of this study is to explore "what tools and technologies, techniques, methods or learning strategies and learning environments are used for collaborative learning in teacher education context. For the study content analysis approach has been employed to survey recently commissioned research studies from the year 2010 to 2018 about the technology supported collaborative learning in teacher education. Total 45 technology supported collaborative learning studies have been reviewed and analyzed after examining various international journals such as (I) computer and science Elsevier (II) Journal of educational technology and society (III) British journal of Education Technology and the Google scholar. The finding of this study are reported according to the criteria of (1) study (Author Name), (2) subject or domain of study, (3) subjects,(4) type of study, (5) study methods, (6) year of publication, (7) tools and techniques used for collaborative learning, (8) learning environment for collaborative learning, (9) group formation techniques used for collaborative learning or population ratio used for study and (10) learning strategies used for collaborative learning approach.

Keywords — Collaborative learning, Technology supported Collaborative learning, Teacher Education

Paper Id: 21

Fire Detection System using Raspberry Pi

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Abstract

The fire detection system to detect fire through camera is real time monitoring system based on Raspberry pi. The main feature of system is to generate alert when fire is placed. The smart fire detection system need surveillance to detect the fire and to control it. This can be achieved by using the Raspberry Pi which control the system and when fire is detected it generate alert and give an alert on android application on the user smartphone which are registered.

Keywords — Fire detection, flame color, flame texture, false alarm

Paper Id: 24

Cloud Based Final Year Project System

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Abstract:

The motivation behind this paper is to instigate the bystander towards acceptance of Cloud Based FYP System .The system is developed in such a way that implements a paperless engagement system. It is pragmatic for all the institutes that are collaborating with students on the project specially Final Year Project. In this paper there is a brief discussion that how users can use the cloud services to affix with each other while in different places .The designing of system is based on different portals. To access these portals users have to register them. User can easily record and update data. The feature of online chat is also available that will helpful for the students. The updating from the users are also available that can be weekly.

Paper Id: 25

NFA Based Formal Modeling of Smart Parking System Using TLA+

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Abstract

The smart objects are used to sense, communicate, send and to share information within a network. Everything which is connected directly or indirectly within a network for the sake of getting, analyze or interpreting data known as IoT. There are many proposed applications of IoT infrastructure in smart city. We have proposed model of smart parking system in this paper which is based on UML, automata-based model and formal methods. The depiction of real-world parking system is done in UML based models to indicate the flow and working of the system. Automata models are used to convert UML diagram into automated system which provides smart mechanism of parking system. Automated model of automata is represented in terms of states and transitions. Every state has unique identity and defined functionality. There are many operations of parking system which are modeled in this paper including find free spaces, search shortest path towards empty slot, car entrance and exit with in a region. A region is an area of parking system which is automated and use to sense a vehicle, car entrance, exit or to find a location. The formal method techniques are used to formally verify system properties using available facilities available in formal method tools. We have used Temporal Logic of Actions (TLA+) formal language to validate and verify system properties using formal techniques. TLA+ is mathematical based notation to describe a system using discrete mathematics concepts. We have integrated these three approaches to model parking system from depiction side, automation side and from the angle of verification and validation of the model.

Keywords — Parking; UML; Formal methods; Verification and validation; TLC

Paper Id: 26

Formal Modeling of Smart office using Activity Diagram and Non Deterministic Finite Automata

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Abstract

In this era, almost Every person spends 8 to 12 hours in office within a day for the sake of earn money. Offices are considered employees second home as much of the time of employees is spent over there. Employees spent their mental or physical energy in order to do work in offices and to get money for fulfilments of their desired needs. However, to increase the efficiency and better performance of the employees there are important steps which are followed. The modelling of smart offices provides the system view for understanding and visualizing of office management system from multiple perspectives. In this paper, the modeling and verification of smart office management system is done using UML diagrams, Automata Theory and formal specification language. The operational and behavioral model of the system is captured using UML diagrams. Automata based models are used to provide automated behavior of a system which includes stat state towards final state. The consistency, accuracy and reliability of the smart office system is done using formal methods. Vienna Development Method and Specification Language (VDM-SL) is used in this paper for verification and validation of the proposed model.

Keywords — Smart office, RFID, UML, Formal methods, Validation & verification.

Paper Id: 29

IOT based Advance Advertisement Smart Screen (AASB) controlled with android application

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Abstract

Advanced advertisement Smart screen (AASB) is primary thing in any public places, utility places like train Station, colleges, malls, hospitals etc. It can also use for blood donation purpose. User can donate money through application. The System is for advance wireless advertisement screen. The system aims at designing LCD based display advertise/messages and control from an android application. This project makes use of wireless technology to build connection from android smart phones through Raspberry pi to display advertise, messages etc. That system is making self-credit-system (SCS) this system is use for transaction. This is also adding additional blood donation feature. In blood donation process user will request for blood donation, admin will confirm the request after checking all the requirement of blood.

Paper Id: 30

Collaboration of Virtual Reality in Our Professional Life

KIRAN MUHAMMAD SALEEM [1], HADIA SAADI[2], MARIA IQBAL[3], AROOBA FATIMA[4], DR.RABIA NOOR ENAM[5]

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Abstract

Virtual Reality has gone forward to grow into one of the substantial measure of almost every field related to engineering, entertainment, industry, medicine and many more. Virtual Reality has been an overnight sensation and proving to be very useful in ways which had never been imagined. Endless applications have been developed for VR. Implementation of virtual reality bring about to get the combination of hardware, software and sensory synchronicity just right it attains something known as a sense of presence. The objective of this paper is to motivate the use of emerging technology Virtual Meeting Room where user will be given an official environment of a meeting room. The subject really feels like they are present in that environment, where they can see other persons sitting in front of them, carry out meetings through voice and can also share images from gallery on a virtual projection screen.

Keyword — Virtual Reality

Paper Id: 32

TALEM (The Advanced Learning and Education Management) System With OBE (Outcome-based Education)

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Abstract

Being a developing country and one where the population is growing almost exponentially, all these sorts of problem like socio-economic problems present in Pakistan and also the underlying cause of these problems is the quality of education, with the help of quality education we can be able to break those strong bridges of social cycles of poverty. "The Advanced Learning and Education Management System" (TALEM System) is amid to bridge the gap between our and international standard of education by providing an easy implementation of Outcome Based Education (OBE) system and to accelerate integration of IT in the educational system of Pakistan by providing a modern campus management solution. Digitizing the attendance process, implementation of Augmented Reality to create better understanding of topics and real time bus tracking to ensure safety all these factors will improve the educational experience. We hope that efforts like TALEM System contribute in the development of the country.

Keywords — Outcome-based education, Cloud Database, Android Application, Web Application, Attendance System, Augmented Reality, Student-Van Tracking Application

Paper Id: 34

Community Algorithm Tool for Educational Domain (CATED)

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Abstract

This research paper is based on CATED, which is the Community Algorithm Tool in Educational Domain. This tool is designed for implementation of the Community Algorithm (CA), which is written by Dr. Muhammad Shahab Siddiqui. CA is actually a population based algorithm, which is used to analyze the interaction between the users in the community or interaction between different communities. In this paper we will discuss all the modules of CATED and also elaborate the extensionsmade in the originalCommunity Algorithm.

Keywords — Community Algorithm, CATED,Community Sticker Generator, eProfile, Randomizer, Graph Analyzer

Paper Id: 38

A Comparative Study of Similarity and Centrality Measures for Friends Recommendation

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Abstract

Nowadays Online Social Networks have gained the most popularity among different communication platforms, and an extensive applications variety is measured for them. Since with the increase in the popularity of Online Social Network, friendship is one of the essential connections amongst members of a social network. Matching of friends is a practical technique to recommend people to each other. In this paper centrality measures are used in Friends of Friends network and similarity measures in group and events network to recommend friend. The Facebook 2010 dataset was used which include the data of friends, groups and events of different users. Friends are recommended based on two different techniques. The first technique is based on friend of friends where friends are recommended based on mutual friends and centrality measure. The second technique used similarity measures to recommend the friend. Lastly, the comparative analysis of both the techniques was done by evaluating accuracies of each technique. The accuracy was calculating by comparing 2010 dataset with the 2018 dataset.

Keywords — SNA, Friends of Friends, Similarity Measures, Centrality Measure, Facebook, Friends Recommendation.

Paper Id: 39

Investigation of a Brain Cancer with Interfacing of 3-Dimentional Image Processing

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Abstract

3D (3-dimentional) image analysis (3-D) provides an effective way to quickly and accurately evaluate complex interactions and functions between neurons. Method of identification based on neuronal program. Other computerized image processing frameworks, for example, information matching systems, produce comparable rays. For the most part, the issue of brain tissue on the same side of the head heated (heat shock proteins) due to glucose is more than the tissue on the other side of the brain. In this study, causes of brain tumors (cancer) due to the increase of glucose metabolism are still unknown. Our research area focuses on paper tumors and oral tumors that develop slowly on the side of the brain. The objective of the study is to address the above problems associated with brain tissues. Our research focuses on how to reduce the impact of cancer and increase human life with the help of chemotherapy and how to identify 3-dimentional segmentation process. In this research work, the author work on brain cancer and apply a statistical model to the tests and discuss brain tumor images that are created using MATLAB software. It then describes the solution from the medical point of view and application, and gives a prediction about the future resulting from the modified technology.

Keywords — Dimensional, heat shock proteins, cancer, Brain tumor, tissues, segmentation, process

Paper Id: 41

Orchestrating Heterogeneous Communities using Middleware Approach

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Abstract

Internet-of-things (IoT) is aimed to proficiently facilitate the dream of interconnected routine objects and links. It is anticipated to share data ubiquitously even without individual's intrusion. In last few years, an interchange from physical gatherings to cybernetic gatherings has been experienced, which prompts neglected communal events in our consistently plan. A fact, living individuals do not know about neighbors with normal interests or adjacent circumstances. This paper attempts to enhance social availability in physical groups as well as virtual groups by utilizing data about individuals, social connections, sharing of any useful information like environmental pollution, and social spots. In this model, the IoT is originating the data from the environment and the Opportunistic community OC is making the possibility of the individual-to-gadget communication. This paper presents a practicable middleware framework associated with mobile agents that empowers Opportunistic community (OC) improvement and gives a typical stage to catching, overseeing, and spreading the social condition of physical groups.

Keywords — opportunistic IoT, orchestration, heterogeneous, societal, broker, Opportunistic Community (OC), Online Social Network (OSN)

Paper Id: 42

Object Recognition for Dental Instruments using SSD-Mobile Net

HASHIR ALI[1], MAHRUKH KHURSHEED[2], SYEDA KULSOOM FATIMA[3], SYED MUHAMMAD SHUJA[4], SHAHEENA NOOR[5]
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Abstract

This paper plans to accomplish real-time object recognition of dental instruments by utilizing deep learning techniques. For this reason, the Single Shot MultiBox Detector (SSD) network was considered as the meta structure and joined with the base Convolutional Neural Network (CNN) MobileNet to shape SSD-MobileNet. Object recognition for dental instruments depends on the SSD-MobileNet. The structure of the SSD was enhanced without giving up its precision. The system parameters and structure were acclimated to streamline the recognition demonstrate. The proposed strategy is connected to the recognition of dental instruments like spatula, elevator, mouth mirror etc in order to constitute a robotic arm; that works with voice commands using speech recognition, as dentist's assistant to pass instruments. This technique can recognize instruments more precisely and quickly as contrast with other lightweight system strategies and conventional machine learning techniques. In addition we have achieved the precision and accuracy of 87.3% and 98.8% respectively.

Keywords — object recognition, SSD-MobileNet, deep learning, CNN, computer vision

Paper Id: 45

Validation of Hertz Theory in order to increase the efficiency of gear element

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Abstract

Basically, mechanically designs are designed in a way that advantage industrial level and primary level with some major elements. These elements can be defined as the cost effectivity, factor of safety and the assembly used in manufacturing the machine. Hertz defined this theory as the calculation of the area and the pressure created by the contact of the two surfaces, which further specifies and predicts the maximum stress an object can bear. The following paper discusses this theory. Index Terms – Hertz theory, Torsional testing, Tensile testing.

Keywords – Hertz theory, Torsional testing, Tensile testing

Paper Id: 46

Enhancement of Efficiency through Optimization of Cast Iron flywheel

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Abstract

Flywheel is a mechanical device that is used in most of the machines to store momentum. This momentum can be extracted for relatively long period of time even if power is cut off. This research is aimed to analyze the of cast iron flywheel through different operating RPM. At each RPM tangential and hook's stress is calculated so that optimized RPM could be found at which maximum life of flywheel could be achieved. In addition to it, another analysis has been carried out that is the time of operating with power on and time when external power is off; this analysis is carried out to evaluate the momentum storing capability cast iron. In this modern era, the most influential yet unsolved problem is the lack of production of efficient energy. The lagging in the production and consumption of energy is increasing rapidly. Thus the primary goal of the modern researchers is quite focused towards one and only issue i.e. generating maximum energy and proposing new ideas for efficient energy storage.

Keywords – Energy Efficiency, Mechanical optimization, Material RPM analysis

Paper Id: 49

Futuristic Short Range Optical Communication: A Survey

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Abstract

Wireless communication has deeply penetrated in our daily life matters which give birth to several new applications and services. Current wireless technologies, such as WiFi uses Radio waves as medium for transmission. However, WiFi communication experiences controlled interference and delay especially in case of real time application and services. LiFi address such inherent issues, and has appeared as an alternative communication architecture which can support higher data rate, low latency and error rate. Furthermore, it is also considered an ideal candidate for secure communication. Therefore, in this paper, we present a survey of the LiFi communication technique and highlight the key challenges in light of the existing literature.

Keywords – WiFi, RF, LiFi, Optical Wireless Communications, Security, Efficiency, High Data Rates, Latency.

Paper Id: 50

Facial Recognition using Convolutional Neural Networks and Implementation on Smart Glasses

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Abstract

Facial Recognition possess the importance to give biometric authentication that is used in a wide range of applications especially in security. A stored database of the subjects is manipulated using image processing techniques to accomplish this task. This paper proposes a frame work of smart glasses that can recognize the faces. Implementing facial recognition using portable smart glasses can aid law enforcement agencies to detect a suspect's face. The advantage over security cameras is their portability and good frontal view capturing. The techniques used for the whole process of face recognition are machine learning based due to their high accuracy as compared with other methods. Face detection is the pre-step for face recognition that is performed using Haarlike features. Detection rate of this method is 98% using 3099 features. Face recognition is achieved using Deep Learning's sub-field that is Convolutional Neural Network (CNN). It is a multi-layer network trained to perform a specific task using classification. Transfer learning of a trained CNN model that is AlexNet is done for face recognition. It has an accuracy of 98.5% using 2500 variant images in a class. These smart glasses can serve in the security domain for the authentication process.

Keywords — Facial Recognition, Image Processing, Artificial intelligence, Machine Learning, Deep Learning, CNN, AlexNet Security

Paper Id: 51

Smart Jacket for Coal Miners

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Abstract

According to the report of print media it has been reported that the total head count who were dead due to natural calamity were 136 in the world in past few years. Social media and print media have recorded and reported many deaths of coal miners in the mine and rescue teams were helpless in this whole scenario, they neither knew the location of miners in the coal mine and nor they knew miners are dead or alive in mine when any sort of disaster happens inside the mine. So after looking at this death ratio the program has been design to solve some of the major issues of miners in coal mine. The design of smart jacket is to prevent solutions for coal miners. The wireless connection technology of device with smart phone is used to justify and take an overview on the situation of miner in coal mine. Useful and important data will be collected at maximum speed and through this data situation, condition and location of miner will be noticed to check the situation of mine and miner in underground coal mine and it can also be saved. Although, wireless connection system is very popular now a days, almost every device or machine is connected to android or IOS operating system phone and is operated through mobile in just one click so keeping up this flow of technology the smart device installed in miner's jacket would be controlled and managed by an Android application.

Paper Id: 53

A Comparative Study of Rural Networking Solutions for Global Internet Access

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Abstract

Over the years, cellular technologies have generally focused on providing services to urban areas, thus leaving the rural locations unaddressed in terms of network coverage. This is because the network providers perceive only those places as service-areas where high revenues may be foreseen. Therefore, the ultimate result is an increase in digital divide among rural and urban areas. In this work, we analyze various technologies regarding their feasibility in rural deployment for the pursuit of global internet access. We break down their suitability in terms of network architecture and performance parameters, followed by their comparison in terms of key characteristics and deployment considerations.

Keywords — Wireless Technologies, Rural Networking, Global Internet.

Paper Id: 55

Simulation based Vehicle to Vehicle and base station communication

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Abstract

Vehicle to Vehicle (V2V) communication plays a significant role in the Intelligent Transportation System (ITS) in Vehicular Ad hoc Networks (VANET) for which the usage of IOT in vehicles is increasing rapidly. Vehicles communicate with each other through wireless networks. However, the deployment of new generation of mobile networks 5G needs a major upgradation of its existing systems such as 4G, LTE and other infrastructure. Therefore, it is proposed to introduce advanced technology of 5G networks upgradation in Vehicle to Vehicle communication. Massive MIMO have the important role for the DSRC (Dedicated Short Range Communication) wireless technology. This mechanism works on the vehicle-to- vehicle communication such as the vehicle relative speed, range transmission etc., base station (tower) and RSU control and monitor of the vehicle to vehicle communication. In this research, the road styles such as square, straight, triangle and any other are designed and tested through simulation program using MATLAB 2017. The upcoming 5G technology for driverless V2V communication makes the journey easier and safer with full control.

Keywords — V2V communication, Simulation, massive MIMO, VANET, IEEE 802.11p, RSU, ITS-5G Communication.

Paper Id: 56

A novel Ensemble Deep Belief Network and Bayesian Adaptive Aggregation for Regression

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Abstract

Ensemble modeling of Neural Networks is a strategy where multiple altenative models (ensemble members) are constructed and then their forecasts are ensembled using various combination approaches. Ensemble of Neural Networks has proved the concept behind this strategy. Deep neural network is a type of neural network that offers potential opportunities to overcome traditional ensemble of neural networks. This paper proposes an ensemble of deep belief networks (DBN). The ensemble members of DBN are constructed with different number of epochs so that the generalization ability can be improved. The outputs of these DBNs are aggregated by a Bayesian model averaging method. The proposed Bayesian adopted ensemble of DBNs is evaluated on two benchmark data sets. Comparison of the proposed model is evaluated with simple averaging and single DBN over a number of forecasting measuring that shows better performance of the proposed model.

Keywords — Ensemble modeling, deep belief network, Bayesian model averaging, forecast combination.

Paper Id: 57

Application of Chaos in Cryptography: A Survey

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Abstract

With the rapid coming forth of internet and data communication technologies, information security has to turn out to be a major issue and constantly attracts the attention of the commercial and academic communities. Since 1960, chaos theory has been extensively studied in sthe development of lowcomplexity cryptographic systems due to the ability to respond to effective change to the initial conditions and control parameters. In fact, many nonlinear dynamical systems of chaos theory can be employed for cryptographic purposes and design cryptographic algorithms, when they successfully implemented in infinite precision computing. However, the application of the chaos theory in the development of the cryptographic algorithms still remains an interesting topic and insufficiently studied in comparison with its implications in cryptography. This paper provides a rapid survey on this subject, focusing on the application of chaos in cryptography.

Keywords — chaos, cryptography, chaotic maps, PRKG

Paper Id: 58

Second Chance Page Replacement Algorithm with Optimal (SCAO)

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Abstract

Virtual memory management uses paging in any operating system, the page replacement algorithm uses to decide which memory pages are to swap out, which depends on the number of page faults. Each algorithm has the aim to have less number of page faults. There are different types of Page Replacement Algorithm, in which we discuss, are Second Chance Page Replacement Algorithm and our new approach is Second Chance with Optimal. Second Chance is a simple modification to FIFO and our new approach is depending on a simple modification to Optimal. According to our research Optimal with Second Chance Replacement Algorithm is better than Second Chance Replacement Algorithm because it has the least number of page faults as compared to the FIFO in Second Chance Replacement Algorithm.

Paper Id: 59

Virtual Tourism Using Samsung Gear VR Headset

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Abstract

In past few years virtual reality has emerged to become the center of attraction for people. Virtual reality may change the manner in which many of the common things are being used today such as it has already changed the gaming world by introducing virtual games. It provides an environment that is somehow look alike that it is real-world or we can say virtual reality provides a simulated real-world environment to its users. It is very popular technology in the field of gaming, but in this paper we will focus on how virtual reality can be beneficial for traveling, it can bring the feeling of reality and immersion to the user as if he is traveling in actual, but in reality he is only experiencing the tour through VR headset. Virtual tours can be used to increase revenues from market perspective. Samsung gear VR powered by oculus is especially designed for people using android technology and it provides a strong sense of reality (i.e. real world). A headset itself helps to provide the 3D look. Using the gear for virtual tours can be a big milestone in the field of tours and travel, it can help people to have exhilarating experience without visiting that place in real and it can greatly influence the tourist due to its interactive nature. The result of this research will define how gear headset can be used to experience tours and how they can be made enchanting using virtual reality.

Keywords — Virtual Reality, Virtual tours, 3D environment, Samsung Gear VR headset.

Paper Id: 86

Analysis of SWIPT based Relaying Network

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Abstract

In this research, we are analyzing the simultaneously wireless information and power transfer (SWIPT) system with one relay node, assuming the relay follows the amplify and forward (AF) protocol of system. In this paper, we have discussed the two types of hardware architectures for energy harvesting from radio frequency; time switching and power splitting. Our simulation results shows the effect of change of fading severity of channel path and change of different noises on performance of data and energy harvesting rate of system.

Keywords — relay system, cooperative relaying, energy harvesting, simultaneous wireless information and power transfer, SWIPT.

Paper Id: 87

Wide Band Gap Thermoset Renewable Polymer Graphite (TPG) Composites

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Abstract

Wide band gap thermoset renewable polymer graphite (TPG) composites thin films with different contents of graphite particles (ascending 5 wt.%) were prepared by slip casting method. Functional groups vibrations were found from Fourier transform-infrared (FT-IR) spectroscopy, whilst carbon graphite particles in thermoset renewable polymer matrix show sharp diffraction peaks through X-ray diffraction (XRD). Morphological view by optical microscopy images showed that the graphite particles are randomly distributed and oriented throughout the matrix. The optical study reveals that the absorbance was high in the ultra violet (UV) region which corresponds to wide band gap energy (4.10 to 3.98 eV). The electrical conductivity of TPG composites was found to increase with respect of graphite particles content. Obtained results indicate that the TPG composites are enhancing the key characteristics of the materials that are suitable for use in optoelectronic device applications in near future.

Keywords — Thermoset renewable polymer, Graphite, Optical properties, Electrical conductivity

Paper Id: 88

Dynamic Mechanical Properties of Biopolymer Blended with HDPE

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Abstract

The interest of present work is producing biopolymer-BP based on vegetable oil blended with high density polyethylene-HDPE by two different forms from particle-P and liquid-L forms namely as BPP and BPL respectively. Manufacturing ratio using varied BP weight percentages of 5, 10, 15, 20, 25 and 30. The prepared polymer blends were subjected dynamic mechanical properties test in terms of storage modulus (E'), loss modulus (E"), and damping (Tan δ) at consistent frequencies of 1 Hz. The results indicated that by increasing the temperature and percentages of loading BPP and BPL, storage modulus (E') and loss modulus (E") was decrease while for Tan δ, the glass transition temperature (Tg) was shifted to the left-lower temperature. The peak for Tg also shows single peak for every percentages which confirms the blending process were miscible.

Keywords — biopolymer, Tan δ, dynamic Mechanical Analysis, storage modulus, loss modulus, miscible.

Paper Id: 89

Design of Experiment for Microporous Sound Absorption Composites

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Abstract

This study is to explore the Design of Experiment (DoE) method by mean to analyse the optimum settings for any related processes being used in the manufacturing process of microporous Polyurethanes (PUs) foams. The microporous interconnected PUs foams were prepared in a cylindrical shape with 100 mm and 28 mm diameter in respect to low and high frequency absorption level (Hz) as well as the sound absorption coefficient (α). Thus, the DoE method was used to optimize the fabrication conditions of PU foams with predetermined operatory conditions with four (4) input factors of X1, X2, X3 and X4. These factors are monomer type (X1), filler ratios (X2), filler type (X3) and sample thickness (X4) (10 mm, 20 mm and 30 mm), which then gives significant trends in morphological responses such as main pore size (Y1), interconnected pore (Y2), strut thickness (Y3) and frequency responses on sound absorption coefficient (α), (Y4) for PUs foams.

Keywords — Acoustic, Design of Experiment, PU foams, Renewable Polymer, Sound Absorption

Paper Id: 90

Mechanical Analysis of Polyurethane and Polyurethane Graphite Thin Film Composites

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Abstract

Virgin Cooking Oil (VCO) is the main substances in fabricating polyurethane graphite thin films. Polyurethane graphite is produce from the reaction of bio-monomer and cross linker into solid substances with the ratio of 2:1 and with increment 2% of graphite weight loading through a slip casting method. The neat polyurethane is namely as NP and polyurethane graphite is namely as PG2, PG4, PG6, PG8, PG10. The morphological view of the thin films surface was observed using Optical Microscope (OM). The results exhibit a homogeneous random dispersed of graphite into polyurethane due to fine interconnected interface within the matrix. Ultraviolet-visible (UV-Vis) the transmittance of the light UVVIS for the six samples is measure. Further material properties in term of thermal-mechanical dependence of polyurethane graphite composites were determined using Dynamic Mechanical Analysis (DMA). It is prove that the addition of graphite changes the matrix properties to stronger modulus and consequent lower Tan σ, with respect of increasing temperature.

Keywords — Graphite, polyurethane, dynamic mechanical analysis, stiffness, damping

Paper Id: 91

Simulation Of Monorail Suspension System Model Under Different Driving Speeds

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Abstract

Designing a new monorail suspension system for an existing monorail bogie to accommodate larger cars, locomotives and more passengers is a complicated and challenging problem to solve. In this paper, a model of 15 degrees of freedom full-car Monorail suspension system model is proposed. In this paper, simulation is performed to predict some dynamic characteristics monorail suspension system. The model features the Monorail body, Front bogie, and rear bogie geometries, adopted equations of motion of the monorail body. Numerical Central Difference method was used to obtain the system responses subject to sinusoidal Track excitations. Different driving speeds were simulated to investigate the train's vertical, lateral, roll pitch and yaw displacements.

Keywords — Monorail-train, MDOF suspension system model, vibration, Track surface excitation, Suspension system dynamic response.

Paper Id: 92

Modeling Middleware Platform for Supporting Active Communication between IOT Devices

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Abstract

Internet of Things (IoT) applications consists of diverse Things including both resource-constrained/rich devices with a considerable portion being mobile. Such devices demand lightweight, loosely coupled interactions in terms of time, space, and synchronization. IoT middleware protocols support one or more interaction types (e.g., asynchronous messaging, streaming) ensuring Thing communication. This work provides a sensor abstract layer, a system layer and an interaction layer. These enable integrated sensing device operations, efficient resource management, and active interconnection between peripheral IoT devices. In addition, this work provides a high level API to develop IoT devices easily for IoT device developers. We aim to enhance the energy efficiency and performance of IoT devices through the performance improvements offered by this work resource management and request processing. The main contribution of this thesis is to introduce an approach and provide a supporting platform for the automated synthesis of interoperability software artifacts. Such artifacts enable the interconnection between mobile Things that employ heterogeneous middleware protocols. Our platform further supports evaluating the effectiveness of the interconnection in terms of end-to-end QoS. More specifically, we derive formal conditions for successful interactions, and we enable performance modeling and analysis as well as end-to-end system tuning, while considering several system parameters related to the mobile IoT.

Keywords — IoT, middleware protocol, RF harvesting, QoS, energy management

Paper Id: 93

Data Rate and BER Analysis for Optical Attocells Configuration Model in Visible Light Communication

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Abstract

Visible light communications (VLC) is a promising technology that is regarded as a promising alternative to radio frequency (RF), due to its unregulated free bandwidth, considerable life expectancy, low cost, and efficiency. In this paper, an optical Attocells configuration model is proposed. It incorporates a low number of LED chips for power efficiency. It is evaluated in terms of its data rate and BER performance. Also, it is optimized to achieve higher received power and SNR distribution. This was achieved by varying its field of view (FOV). Besides, various data rates were implemented to evaluate its performance. A data rate of 100 Gb/s was achievable with acceptable BER. Moreover, alternative modulation techniques were implemented to investigate the system performance. Further, they included NRZ-OOK, RZ-OOK, BPSK QPSK DPSK, and L-PPM. 4-PPM had achieved the best BER performance.

Keywords — Visible light communication (VLC), Optical attocell, Bit Error Rate (BER), Data Rate

Paper Id: 94

Visible Light Communication the next Future Generation System

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Abstract

Optical Communication represents a leap in the field of communication compared to radio frequency (RF) which suffers the interference and low response time due to crowded bandwidth. Visible light communication (VLC) is preferred in optical communication because it operates within the spectrum of visible light, which is healthy, harmless, and has a huge bandwidth up to 400 THz. this paper presents a review for the great development in semiconductors field, especially light emitting diode (LED) and the Laser diode (LD) whose used in illumination, which was exploited at the same time for the purpose of communications. the methods of optical signal modulation and comparing these methods were also reviewed based on their characteristics

Keywords — VLC, laser, LED,LD, OFDM, FBMC, optical

Paper Id: 95

Leakage Current In Eyes Of Infrared Thermography

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Abstract

Current leakage can happen in any industry's electrical installation. It might lead to unintended incident such as electric shock, power supply trip and fire if not being address earlier. If appear, hard to trace its root cause. Conservative method is checking one after another electrical loads with aids either clamp meter or multimeter. This method could be tedious for bulky numbers electrical installations. Thus, significant solution deems necessary. This paper describe study on Infrared Thermography (IRT) as alternative method in trace leakage current. The scope is to identify IRT parameters those represent value of leakage current. Follow by investigation of relationship linking leakage current to IRT come with necessary experiment. The results of experiment support hypothesis drawn. Subsequently, leakage current managed to be view in perspective of thermogram. The same methodology could be applied to other types of electric conductor which are copper and aluminium.

Keywords — Thermogram, emissivity, Stefann Boltzman, earthing, Oil & Gas.

Paper Id: 96

Enhancement of FSO Range for FSO Ground to Train Communications Link Using Multiple Transmitters Concept

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Abstract

Nowadays, there is a rapid demand for high-speed internet access on high-speed trains. Free space optical communication technology has the potential to meet that demand, due to its ease of deployment, unlimited bandwidth, and extremely high throughput. In this paper, we propose an enhancement of free space optical link model link range by implementing multiple transmitters concept. Our proposed model is evaluated in terms of received power, bit error rate, link margin and the required number of base stations. Simulation is conducted under various weather conditions also. By comparing the performance of single, dual, triple and quad transmitters under various rain and for attenuation levels link range was significantly improved. Additionally, the required number of base stations to achieve acceptable FSO communication link at BER of 10-9 was significantly reduced.

Keywords — FSO, Ground to train communications, G2T, atmospheric attenuation, link margin

Paper Id: 97

Simulation of Undersea Optical Communication System using DCF and SSF

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Abstract

Optical fiber is the link and backbone of the communication system. Especially fiber optics undersea, where low loss, high efficiency and large effective area major for enabling system to transmit big data up to thousand kilometer with less distortion. In this paper, we design 220 Km fiber optic system with data rate 40 Gb/s in term of two scenario such as the first scenario used fiber optic cable with 80 $\boldsymbol{\mu M}$ core diameter and second scenario which used optic fiber cable with 17 $\boldsymbol{\mu M}$ core diameter which makes transmission signal for long distance very difficult. Observed the first scenario, signal transmitted with less dispersion and less bit error rate 2.956*$\mathbf{10}^{-}\mathbf{44}$ over 220 Km. Signal transmitted over 220 Km with high chromatic dispersion in second scenario. To avoid chromatic dispersion using ideal dispersion compensation FBG which reflected undesired signal. Received signal in the other side with bit error rate 4.8625 *$\mathbf{10}^{-}\mathbf{13}$.

Keywords — RoF; RZ modulation; optical fiber; optical wireless system.

Paper Id: 98

Radio Over Fiber (RoF) Implementation using MZM For Long Distance Communication

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Abstract

The performance of radio over fiber (RoF) links using low cost optoelectronic components is assessed for distributed antenna applications in next generation wireless systems. Important design issues are discussed and an example link design is presented for a wireless system requiring the transmission of one radio channel per link direction, the proposed optical fiber system is designed to transmit 2 Gbits/s over 5000 km. 1300 nm wavelength is used in the proposed system and single mode optical fiber. Firstly, a random data, RZ pulse generator, 10 dBm 1300 nm laser sources and MachZehnder Modulator (MZM) are used to transmit the 2 Gb/s. The initial link was proposed by using 50 fiber cables are connected every single cable has length of 100 km. Therefore, the total link becomes 5000 km. 50 optical EDFA amplifiers with power of 20 dB have used to amplify the transmitted light power. The results that the received data has BER of 4×10-14 by using RZ pulse generator, provided the wireless system has uplink power control. Finally, we compare the cost and performance of RoF links for this application with alternative link types that use digitized radio transmission and show that RoF is the optimum choice from a cost perspective.

Keywords — RoF; RZ modulation; optical fiber; wireless system, MZM

Paper Id: 99

A Conceptual Framework for Determining Acceptance of Internet of Things (IoT) in Higher Education Institutions of Pakistan

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Abstract

The IoT is the latest innovation and increasingly growing area to be implemented in all areas of life especially in higher education. This has created new excitement and challenges for the academicians, this study will focus on IoT adoption and acceptance in higher educational institutes of Pakistan. The way IoT in learning environments supports educators can influence how we collaborate, communicate and operate. In this research, we focus on two aspects to investigate here. Firstly, how students are taught and; Secondly, how educational institutions can bring in IoT to improve learning. This study explores the significant factors which affect the acceptance and usage of the IoT for academic learning purpose in higher education institutes of Pakistan. This research proposes an integrated framework including some widely accepted technology models and social psychology of Unified Theory of Acceptance and Use of Technology 2 (UTAUT2). This research used the network analysis approach to observe the users' behavior towards different IoT applications usage in higher education. The consideration of factors that have significant influence on the acceptance of Internet of Things (IoT) in higher education institutions of Pakistan and the indepth analysis showed that few applications are being used heavily compared to all other applications. This study provides basis for developing countries, to increase wider acceptance and use of IoT technologies in higher education to provide benefits for both students' and faculty members.

Keywords — Internet of Things (IoT); Higher Education Institutions; UTAUT2; insert (key words)

Paper Id: 105

Cost effective monitoring system for the early detection of ischemic stroke in smoker

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Abstract

Deprived oxygen and nutrients to brain tissue due to lack of blood flow to brain may cause cell death as a consequence of ischemic stroke. The conventional method was noticing the signs and symptoms of stroke particularly restricted mobility of face & arm along with the affected speech delivery. Mostly it has been observed in stroke condition that the patient is partially or fully paralyzed & unable to perform daily activities as their range of motion is decreased. Initial diagnosis can improve the life of the patient by reducing the damage & neurological complications of brain. This paper provides the effective and economical solution to overcome the issue by monitoring CO concentration, heart rate & temperature of the individual as these parameters are affected in stroke patients as compare to the normal individuals. The idea is to design an economical and portable device which detect the set parameters using sensors.

Keywords — Ischemic stroke, CO concentration, heart rate, temperature, blood flow

Paper Id: 114

Low Complexity Object Detection with Background Subtraction for Intelligent Remote Monitoring

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Abstract

Advancements in digital technologies have enabled cost-effective deployments of visual sensor nodes that can detect a motion event in the coverage area. The real world field remote monitoring image capture conditions, for example, in security and ecological studies are affected by wind, rain, snow, sunlight etc. and are seldom ideal. Motion detection is a precursor to subsequent intelligent processing on the image to extract information. Less complex object detection techniques often rely on maintaining a background image and subtracting foreground image, purporting to have an object in it, to create a difference image to determine the presence of a moving object. Correct object detection is critical as otherwise resulting false positive (without a moving object) images needlessly invoke further processing, storage and analysis. In this paper, we review background subtraction techniques and propose an image differencing technique that can significantly reduce the algorithm complexity along with other associated advantages. The results of proposed reduced image subset are provided to highlight the benefits.

Keywords — JPEG, image differencing, false positive, object detection, low complexity, ecology, computer vision

Paper Id: 115

Reliable Image Notifications for Smart Home Security with MQTT

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Abstract

Internet of Things (IoT) applications utilize low powered battery operated devices and reliable event notifications depend on low-power messages from the sensors node to the server and vice versa over bandwidth constrained unreliable channels. Publish/subscribe communications protocols play an important part in such low-powered device communications with Message Queuing Telemetry Transport (MQTT) protocol being most prevalent for such deployments. These protocols have enabled IoT applications such as smart home, fleet management, oil pipelines and space exploration that heavily depend on reliable communications. This paper investigates utilization of MQTT protocol fora smart home security system. A Raspberry Pi implementation detects an intrusion event using a passive infrared sensor triggering an image capture, which is then communicated to the subscribed client for countermeasures. Results for power consumption and data transfer are provided that help understand the behavior with different service qualities.

Keywords — Notifications; Internet of Things; M2M; home security; power measurements; image communications;

Paper Id: 209

An empirical study on practice of requirement engineering activities in Software Industries

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Abstract

Requirement engineering is essential level of software production and first level of software development life cycle (SDLC). In requirement engineering, Requirement elicitation is very difficult and critical task for quality product. Different requirement practices have deep relationship with successful projects. This study aimed to find out the procedure of requirement elicitation and management in Pakistan software industry. In this document, provisions of processes and software products are tried to report. Our investigations were carried out by a well-known software company of Lahore. We have investigated the company's requirement engineering processes on the basis of best practices of elicitation, requirement analysis, Requirement description, system modelling, requirement validation and requirement management. Our findings walk us through, to investigate best practices used in requirement engineering process and we observed how these practices are implemented and at which level are followed by software industry.

Keywords — Software Requirement Engineering practices, Requirement Elicitation, Survey based Research

Paper Id: 210

A Survey on integration of Emerging Cloud Computing and Internet of Things

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Abstract

In this global era of technology, ambient intelligence links all real-life objects to internet, allowing us to collect all their data for information extraction and even its transformation into knowledge. With the rapid growth of Internet of Things (IoT), arises the need of more storage and computation power, which makes it essential for IoT to go along with distributed computing due to the enormous proportion of data IoT may produce. The virtually unlimited processing and storage resources of distributed systems are the minuscule solution to IoT's resource issues and will also assist in mining potentially valuable statistics to help create smart applications for the users. In this survey, we are focusing on the consolidation of Cloud Computing and IoT, which is what we call Cloud of Things (CoT). Numerous researchers have studied Cloud computing & IoT on an individual premise and, their fundamental things, highlights and stifled technologies. In this paper, we offer a survey on the consolidation of Cloud and IoT. Beginning by examining the foundations of each IoT and Cloud Computing, we will in general discuss their fundamental technologies, their complementarity, and particularization and then finally we will be heading to their joining. The Cloud of Things concept has brought a variety of realizations to life. In this paper we have discusses some of the key problems that ascend from cloud and IoT integration and a few views on how to counter these issues.

Keywords— Cloud Computing, Internet1of1Things, Cloud of Things, CC, IoT, CoT.

CONFERENCE AIMS AND OBJECTIVES

The International Research Conference is a federated organization dedicated to bringing together a significant number of diverse scholarly events for presentation within the conference program. Events will run over a span of time during the conference depending on the number and length of the presentations.

The ICISCT 2019 event aims to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results on all aspects of INFORMATION SCIENCE and COMMUNICATION TECHNOLOGY. It also provides a premier interdisciplinary platform for researchers, practitioners and educators to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered and solutions adopted in the fields of INFORMATION SCIENCE and COMMUNICATION TECHNOLOGY.

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