

# Conference Program Overview

December 8th, 2014		
08:30 A M - 09:00 A M	<b>Registration</b> (Main Lobby, Ground Floor)	
09:00 A M - 11:00 A M	Welcome Address Inaugural Speech Key Note: Dr. Sohaib Khan (Main Auditorium, Ground Floor)	
11:00 A M - 11:30 A M	<b>Tea Break</b>	
11:30 A M - 01:00 P M	<b>Session 1A</b> Requirements Engineering (Main Auditorium, Ground Floor)	<b>Session 1B</b> Cognitive Radio Networks (MEDC Seminar Room, Ground Floor)
01:00 P M - 02:30 P M	<b>Lunch and Prayer Break</b>	
02:30 P M - 04:00 P M	<b>Session 2A</b> Software Engineering (Main Auditorium, Ground Floor)	<b>Session 2B</b> MEMS, Robotics & Sensing Applications (MEDC Seminar Room, Ground Floor)
04:00 P M - 04:20 P M	<b>Tea Break</b>	
04:20 P M - 05:40 P M	<b>Session 3</b> Semantic Analysis, Image Processing, Bio Informatics (Main Auditorium, Ground Floor)	
07:00 P M - 09:00 P M	<b>Conference Gala Dinner</b> (Lawn at FAST, NU)	

<b>December 9th, 2014</b>		
09:15 A M - 09:55 A M	Key Note: Sustainable Computing and Human Engineering: A New Dimension in Computing, Dr. Zubair Sheikh (Main Auditorium, Ground Floor)	
10:00 A M - 11:30 A M	<b>Session 4A</b> Power & Energy Systems (Main Auditorium, Ground Floor)	<b>Session 4B</b> Computer Networks, Cloud Computing & Cryptography (MEDC Seminar Room)
11:30 A M - 11:50 A M	<b>Tea Break</b>	
11:50 A M - 01:20 P M	<b>Session 5A</b> Communications (Main Auditorium, Ground Floor)	<b>Session 5B</b> Encryption, Cryptography & Security (MEDC Seminar Room, 1 <sup>st</sup> Floor)
01:20 P M - 02:30 P M	<b>Lunch and Prayer Break</b>	
02:30 P M - 04:00 P M	<b>Session 6</b> Information Retrieval & Machine Learning (Main Auditorium, Ground Floor)	
04:00 P M - 05:00 P M	<b>Panel Discussion</b> (Main Auditorium, Ground Floor)	
05:00 P M - 05:30 P M	<b>Closing Ceremony</b> (Main Auditorium, Ground Floor)	
05:30 P M - 06:00 P M	<b>Tea Break</b>	

## **Welcome to FAST-NU**

Founded as a Federally Chartered University in July 2000, the National University of Computer and Emerging Sciences is a premiere University of Pakistan, renowned for quality and impact of its students in the development of local software and other industries. The university has five modern campuses at Karachi, Lahore, Islamabad, Peshawar, and Chiniot-Faisalabad. These campuses provide world-class educational environment and recreational facilities to over 10,000 students, around one fifth are female.

Research wings of the university are well recognized, nationally and internationally. They are embarked upon cutting edge research having direct impact on the social, economic and technological needs of Pakistan. Our vision is to become a globally recognized research university of Pakistan within the next decade. The Islamabad Campus of the university comprises of highly reputed and internationally acknowledged research groups, including Software Quality Engineering & Testing Laboratory (QUEST Lab), SysNet, and Reveal.

## **Welcome to ICET 2014**

National University of Computer & Emerging Sciences (FAST – NU), Islamabad welcomes you to the 10th International Conference on Emerging Technologies (ICET 2014). ICET is the flagship conference of IEEE Islamabad Section and is being hosted by FAST – NU this year.

The ICET 2014 technical program is the result of amazing work of the 75 dedicated members of its Program Committee (PC) and the Track and General Chairs. The PC is very well balanced from both technical and geographical perspective (52% are from Pakistan, 48% are foreign reviewers). Over 25 countries are represented in the program committee. Their efforts helped in enforcing the mission of ICET: 'It is not only a place to share knowledge but also a place to learn new skills and promote collaboration and cooperation'.

After a rigorous review process, out of 167 submitted papers, the conference accepted only 31 high quality papers across the tracks of electrical engineering, computer science, and software engineering. This corresponds to an acceptance rate of 19%. Stringent quality criteria were set to ensure that only highest quality papers are published. This is in line with the goals and objectives of FAST NU: We always strive to set highest possible quality standards. We hope that this conference will help elevate the quality standards of conferences in Pakistan.

ICET 2014 comprises of an exciting program that spans various aspects of computer science, software engineering, and electrical engineering. In addition the program also emphasizes on industry experience papers to allow the industry practitioners to present their work and contributions. The conference program also includes distinguished keynote speakers and session speakers providing the conference attendees with their valuable thoughts.

The ICET 2014 would not have been possible without the financial, logistical, and material support of our sponsors; The Foundation for Advancement of Science and Technology (Fast Foundation), the Higher Education Commission of Pakistan, and the IEEE Islamabad Section.

We hope that ICET 2014 program will provide you new insights in emerging technologies, topics of interests, and new research avenues.

<b>Conference Organizing Committee</b>	
<b>Conference Patron-in-Chief</b>	Dr. Amir Muhammed
<b>Conference Chair</b>	Dr. Arshad Ali Shahid
<b>Conference Co-chair (s)</b>	Dr. Zia-Ul Qayyum
<b>Conference Secretary</b>	Dr. Uzair Khan
<b>Steering Committee Chair(s)</b>	Dr. Waseem Ikram Dr. Aftab Maroof
<b>Technical Committee Chair</b>	Dr. Kashif Munir
<b>Technical Committee Co-Chair (s) (General)</b>	Dr. Waseem Shahzad Dr. Sibte ul Hussain

<b>Technical Committee Co-Chair (s) (Electrical Eng.)</b>	Dr. Mukhtar Ullah Dr. Shahzad Saleem
<b>Technical Committee Co-Chair (CS &amp; SE)</b>	Dr. Zohaib Iqbal
<b>Publication Chair</b>	Dr. Ehtesham Zahoor
<b>Publication Co-Chair</b>	Mr. Hasan Mustafa
<b>Finance Chair(s)</b>	Dr. Atta Ul Aziz
<b>Industry/ Academic Liaison Chair</b>	Mr. Atif Jilani
<b>Local Arrangement Chair</b>	Dr. Sibt Ul Hussain
<b>Local Arrangement Co-Chair</b>	Mr. Ali Nasir
<b>Local Arrangement Committee</b>	Mr. Amman Ullah Khan Mr. Fida Ul Hassan Mr. Zia Abbasi Mr. Maqsood Abbasi Mr. Muhammad Mumtaz
<b>Student Volunteers</b>	Mr. Safdar Aqeel Safdar Ms. Sidra Iftikhar Ms. Maham Khalid Mr. Ahmad Hassan Ms. Numra Arshad Ms. Wardah Mahmood Ms. Rubab Zahid Ms. Zainab Javed Mr. Sharjeel Hussain Ms. Gohar Javed Mr. Zeeshan Ahmed Ms. Saba Luqman Ms. Wajiha Mughal Ms. Madiha Javed Ms. Quratulain Ms. Hareem e Seher Ms. Arfaa Asif

# Technical Program Committee

## Computer Science/Software Engineering

### Track Chair

Muhammad Zohaib Iqbal	National University of Computer & Emerging Sciences, Pakistan
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### Program Committee Members

Rabeeh Ayaz Abbasi	Quaid-i-Azam University, Pakistan
Mohammad Abdallah	Al-Zaytoonah University, Jordan
Abdelkader Adla	Université d'Oran, Algeria
Wasif Afzal	Mälardalen University, Sweden
Fareed Ahmad	FAST – NU, Islamabad, Pakistan
Ghufran Ahmed	COMSATS Islamabad, Pakistan
Muhammad Aleem	Mohammad Ali Jinnah University, Pakistan
Shaukat Ali	Simula Research Laboratory, Norway
Asad Ali	COMSATS Islamabad, Pakistan
Mohammad Alshayeb	King Fahd University of Petroleum & Minerals, KSA
Maria Anjum	Durham University, UK
Farrukh Aslam Khan	King Saud University, Saudi Arabia
Azlan Awang	Universiti Teknologi PETRONAS, Malaysia
Muhammad Khurram Bhatti	University of Nice-Sophia Antipolis, France
Younes El Amrani	Mohammed V-Agdal university, Rabat, Morocco
Muhammad Fahad	IUT Lumière, University of Lyon II, Bron, France
Usman Farrokh	FAST – NU, Islamabad, Pakistan
Imran Ghani	University Technology Malaysia, Malaysia
Zahid Halim	GIK Institute, Pakistan
Jianye Hao	Massachusetts Institute of Technology, US
Amir Hayat	NUST SEECS, Pakistan
Hadi Hemmati	University of Manitoba, Canada

Syed Jamal Hussain	University of Karachi, Pakistan
Ayyaz Hussain	International Islamic University, Pakistan
Fawad Hussain	Ghulam Ishaq Khan Institute, Pakistan
Naveed Ikram	Riphah International University, Pakistan
Muhammad Imran	Qatar Computing Research Institute, Qatar
Sohail Iqbal	NUST SEECS, Pakistan
Sharifullah Khan	NUST SEECS, Pakistan
Xavier Lagrange	Telecom Bretagne, France
Jong-Hyouk Lee	INRIA, France
Renato Lo Cigno	University of Trento, France
Muhammad Muzzamil Luqman	L3i Laboratory, University of La Rochelle, France
Muhammad Khan	NUST SEECS, Pakistan
Sajjad Mahmood	King Fahd University of Petroleum & Minerals, KSA
Abdul Rauf Malik	Al-Imam Mohammad University, Saudi Arabia
Sheheryar Malik	Riphah International University, Pakistan
Mubashar Mushtaq	Quaid-i-Azam University, Pakistan
Muhammad Naeem	University of Gujrat, Pakistan
Munir Naveed	University of South Pacific, Fiji Islands
Isil Öz	SICS Swedish Institute of Computer Science, Sweden
Rajwinder Panesar-Walawege	Simula Research Laboratory, Norway
Harry Perros	NC State University, US
Nafees Qamar	Vanderbilt University, US
Naveed-Bin Rais	Mohammad Ali Jinnah University, Pakistan
Omer Rana	Cardiff University, UK
Irum Rauf	Abo Akademi University, Finland
Shafqat Rehman	Air University, Pakistan
Zahid Riaz	Technical University of Munich, Germany
Mehreen Saeed	FAST-NU, Lahore, Pakistan
Muzammil Shahbaz	University of Sheffield, United Kingdom
Asadullah Shaikh	Najran University, Saudi Arabia

Shafay Shamail	Lahore University of Management Sciences, Pakistan
Javid Taheri	The University of Sydney, Australia
Sadaf Tanvir	COMSATS, Pakistan
Muhammad Yousaf	Riphah Internation University, Pakistan
Tao Yue	Simula Research Laboratory, Norway
Saad Zafar	Riphah International Univesity, Pakistan

## Electrical Engineering

### Track Chairs

Mukhtar Ullah	National University of Computer & Emerging Sciences, Pakistan
Shahzad Saleem	National University of Computer & Emerging Sciences, Pakistan

### Program Committee Members

Aamir Habib	Institute of Space Technology, Pakistan
Abdul Qayyum Khan	Pakistan Institute of Engineering and Applied Sciences
Christian Vogel	FH-Joanneum, Graz, Austria
9999Fakhar Anjam	Informatics Complex, Pakistan
Ghulam Mustafa	Pakistan Institute of Engineering and Applied Sciences
Junaid Ahmed	COMSATS Institute of Information Technology, Pakistan
Laiq Hasan	University of Engineering & Technology, Peshawar
Laiq Khan	COMSATS Institute of Information Technology, Pakistan
M Faisal Nadeem	National Development Complex, Pakistan
Muhammad Abid	Pakistan Institute of Engineering and Applied Sciences
Mukhtar Ali	National Development Complex, Pakistan
Nadeem Javaid	COMSATS Institute of Information Technology, Pakistan
Nadia Nawaz	COMSATS Institute of Information Technology, Pakistan
Qasim Ahmed	King Abdullah University of Science and Technology, Saudi Arabia
Qasim Chaudhari	University of Melbourne, Australia



Rashad Ramzan	United Arab Emirates University
Seyab Khan	Informatics Complex, Pakistan
Sheraz Anjum	COMSATS Institute of Information Technology, Pakistan
Tania Habib	University of Engineering & Technology, Lahore
Waheed Bajwa	Rutgers, The State University of New Jersey
Waleed Ejaz	Queen’s University, Kingston, Canada.

## Location

**FAST-NU, Islamabad Campus, A.K Brohi Road, H-11/4 Islamabad, Pakistan**



## Internet Access

The Conference venue (and indeed the entire University) provides wireless internet access. You may access the network using NUCES Islamabad Campus Wifi. The login credentials are available at ICET 14 Information Desk in the main lobby.

## Parking

Parking will be provided at FAST-NU, Islamabad Campus. Please bring your invitation card and show at the entrance of university.

## Detailed Program

<b>Day 1 – Monday, December 08, 2014</b>	
<b>Time</b>	<b>Event Details/Venue</b>
<b>08:30 A M</b> - <b>09:00 A M</b>	Registration (Main Lobby, Ground Floor)
<b>Plenary Session (Main Auditorium)</b>	
<b>09:00 A M</b> - <b>11:00 A M</b>	Welcome Note
	ICET 2014 Inaugural Speech
	Key Note: Dr. Sohaib Khan
<b>11:00 A M</b> - <b>11:30 A M</b>	<b>Tea Break</b>

**Track: Computer Science/Software Engineering (Parallel Track)**  
**Venue: Main Auditorium**

**Session 1A – Requirements Engineering**

11:30 AM - 12:00 PM	Session Talk: Dr. Naveed Ikram – “Human Cloud”
12:00 PM - 12:20 PM	Multi-Aspects Based Requirements Prioritization Technique for Value-Based Software Development, Falak Sher, Dayang N. A. Jawawi, Radziah Binti Mohamad and Muhammad Imran Babar
12:20 PM - 12:40 PM	Knowledge Management Model for Support of Requirement Engineering, Muhammad Ahsan and Yasir Hafeez
12:40 PM - 1:00 PM	Requirements Engineering Process for Software-as-a-Service (SaaS) Cloud Environment, Anum Tariq, Shoaib Ahmed Khan and Sundas Iftikhar Ahmed

**Track: Electrical Engineering (Parallel Track)**  
**Venue: MEDC Seminar Room**

**Session 1B – Cognitive Radio Networks**

11:30 PM - 12:00 PM	Session Talk: Dr. Ihsan Ayub Qazi – Friends, not Foes: Synthesizing Existing Data Center Transport Strategies in PASE
12:00 PM - 12:20 PM	Throughput Optimization For Cognitive Radio While Bulwarking Primary User, Zunnorain A.A. Baig, Aqdas N. Malik and Ijaz M. Qureshi
12:20 PM - 12:40 PM	A Mitigation Strategy against Malicious Primary User Emulation Attack in Cognitive Radio Networks, Bilal Naqvi, Shafaq Murtaza and Baber Aslam
12:40 PM - 1:00 PM	Performance of Double Threshold Energy Detection in Cooperative-Cognitive Networks over Nakagami-m Fading Channels using Square Law Combining Technique, Atta Ur Rahman, AnsarUIHaq, Muhammad Adnan, Imran Khan and Ibrar Ali Shah

<b>1 : 0 0 P M</b> - <b>0 2 : 3 0 P M</b>	<b>Lunch &amp; Prayer Break</b>
<b>Track: Computer Science/Software Engineering (Parallel Track)</b> <b>Venue: Main Auditorium</b>	
<b>Session 2A – Software Engineering</b>	
<b>0 2 : 3 0 P M</b> - <b>0 3 : 0 0 P M</b>	Session Talk: Dr. Aamer Nadeem – Formal Methods in Software Engineering
<b>0 3 : 0 0 P M</b> - <b>0 3 : 2 0 P M</b>	An evaluation of personal and interpersonal competencies of project managers, Aamer Hanif and Saleem Tariq
<b>0 3 : 2 0 P M</b> - <b>0 3 : 4 0 P M</b>	Service Integration for Biometric Authentication, Shazia Javed and Ulrich Norbistrath
<b>0 3 : 4 0 P M</b> - <b>0 4 : 0 0 P M</b>	A State-based Fitness Function for the Integration Testing of Object-Oriented Programs, Muhammad Bilal Bashir and Aamer Nadeem
<b>Track: Electrical Engineering (Parallel Track)</b> <b>Venue: MEDC Seminar Room</b>	
<b>Session 2B– MEMS, Robotics and Sensing Applications</b>	
<b>0 2 : 3 0 P M</b> - <b>0 3 : 0 0 P M</b>	Session Talk: Dr. Shafaat Bazaz– Fabless Prototyping for the Development of Microchips for University Researchers
<b>0 3 : 0 0 P M</b> - <b>0 3 : 2 0 P M</b>	A Novel Design of RF MEMS Shunt Switch with dimples and meanders, Muhammad Qamar ul Hassan
<b>0 3 : 2 0 P M</b> - <b>0 3 : 4 0 P M</b>	Vibration-based Electromagnetic type Energy Harvester for Bridge Monitoring Sensor Application, Farid Khan and Iftikhar Ahmad

03:40 P M -	A Bi-directional Prototype Mobile Robot to Experiment Light Scale Object-Transportation Schemes, Muhammad Bilal Khan, Muhammad Awais Hussain, Khurram Shahzad, Sajid Nawaz, Muhammad Umar Touseef and Raja Jawad Ali Khan
04:00 P M -	<b>Tea Break</b>
4:20 P M	
<b>Track: Computer Science/ Software Engineering</b>	
<b>Venue: Main Auditorium</b>	
<b>Session 3 – Semantic Analysis, Image Processing, Bio Informatics</b>	
04:20 P M -	Analysing the Performance of EIT Images Using the Point Spread Function: Alamgir Naushad, Ahmar Rashid and Suleman Mazhar
04:40 P M -	A novel approach for automatic gene selection and classification of gene based colon cancer datasets, Saima Rathore, Mutawarra Hussain and Muhammad Aksam Iftikhar
05:00 P M -	Hybrid Modeling of p53 and Akt associated Gene Regulatory Network, Farzana Bibi and Jamil Ahmad
05:20 P M -	The Internet of Things: Challenges & Security Issues, Gurpreet Matharu, Priyanka Upadhyay and Lalita Chaudhary
05:40 P M	
7:00 P M -	<b>Conference Gala Dinner</b>
09:00 P M	
<b>Venue: Lawn at FAST NU, Islamabad Campus</b>	

<b>Day 2 – Tuesday, December 09, 2014</b>	
<b>Time</b>	<b>Event Details/Venue</b>
09:15 A M -	Key Note: “Sustainable Computing and Human Engineering: A New Dimension in Computing”, Dr. Zubair Shaikh
10:00 A M	

**Track: Electrical Engineering (Parallel Track)****Venue: Main Auditorium****Session 4A- Power and Energy Systems****1 0 : 0 0 A M****1 0 : 3 0 A M**

Session Talk: Dr. Hammad Alizai – Sensors with Lasers: Building a WSN Power Grid

**1 0 : 3 0 A M****1 0 : 5 0 A M**

Design and Implementation of an Intelligent Energy Saving System, Adil Murad, Salim Ullah, Arif Ali Shah, Kiramat Ullah Khan, Asif Ali Khan and Laiq Hasan

**1 0 : 5 0 A M****1 1 : 1 0 A M**

An Efficient Off-Grid High-Elevation Electric Generation System Using Wind Power, Arif Ali Shah, Salim Ullah, Syed Aamir Ali Shah, Muhammad Asif Manzoor and Khawaja Muhammad Yahya

**1 1 : 1 0 A M****1 1 : 3 0 A M**

MEMS Based Wireless Energy Harvesting Mechanism for ECG and BCG Application, Ahmad Usman, Mohsin Mukhtar and Rana Muhammad Umer

**Track: Computer Science/Software Engineering (Parallel Track)****Venue: MEDC Seminar Room****Session 4B – Computer Networks & Cloud Computing****1 0 : 0 0 A M****1 0 : 3 0 A M**

Session Talk

**1 0 : 3 0 A M****1 0 : 5 0 A M**

Performance Comparison of Hadoop Clusters Configured on Virtual machines and as a Cloud Service, Muhammad Faraz Hyder, Muhammad Ali Ismail and Hameeza Ahmed

**1 0 : 5 0 A M****1 1 : 1 0 A M**

On the Controllability of a Sampled-Data System under Non-uniform Sampling, Muhammad Niaz Ahmad, Ghulam Mustafa, Abdul Qayyum Khan and Muhammad Rehan

**1 1 : 1 0 A M****1 1 : 3 0 A M**

A Novel Vehicle-to-Grid Technology with Constraint Analysis-A Review, Salman Habib and Dr. Muhammad Kamran

11:30 A M - 11:50 A M	<b>Tea Break</b>
<b>Track: Electrical Engineering (Parallel Track)</b> <b>Venue: Main Auditorium</b>	
<b>Session 5A –Communications</b>	
11:50 A M - 12:20 P M	Session Talk: Dr. Khurram Bhatti – Predictable Task Scheduling in parallel Computing System
12:20 P M - 12:40 P M	Range and Doppler Estimation of Multiple Moving Targets for Pulsed Doppler Radars with CFAR Detector at Very Low SNRs, Muhammad Zohaib Butt and Sufi Gul
12:40 P M - 1:00 P M	A High Speed Transmitter for Visible Light Communications upto 50 Mbps, Abdullah Ahmed, Jamal Ahmad and Usman Younis
01:00 P M - 01:20 P M	Electro-textile based wearable patch antenna on biodegradable Poly Lactic Acid (PLA) plastic substrate for 2.45 GHz, ISM band applications, Haroon Haroon, Sadiq Ullah and James A. Flint
<b>Track: Computer Science/Software Engineering (Parallel Track)</b> <b>Venue: MEDC Seminar Room</b>	
<b>Session 5B – Encryption, Cryptography and Security</b>	
11:50 A M - 12:20 P M	Session Talk
12:20 P M - 12:40 P M	Oppel-2: A New Family of FCSR-based Stream Ciphers, Arshad Ali
12:40 P M - 1:00 P M	Comparative Analysis of Chaotic and Non-chaotic Image Encryption Schemes, Muhammad Bin Younas and Jawad Ahmad

0 1 : 0 0 P M - 0 1 : 2 0 P M	Security Analysis of VoIP Architecture for Identifying SIP Vulnerabilities, Ubaid Ur Rehman and Abdul Ghafoor Abbasi
0 1 : 2 0 P M - 0 2 : 3 0 P M	<b>Lunch &amp; Prayer Break</b>
<b>Track: Computer Science/ Software Engineering</b> <b>Venue: Main Auditorium</b>	
<b>Session 6: Information Retrieval &amp; Machine Learning</b>	
0 2 : 3 0 P M - 0 3 : 0 0 P M	Session Talk: Dr. Zahid Halim– Learning from Large Scale Graph with Map-Reduce for Big Data Analytics
0 3 : 0 0 P M - 0 3 : 2 0 P M	A Semantic Rules & Reasoning based Approach for Diet and Exercise Management for Diabetics, Irshad Faiz, Hamid Mukhtar, Ali Mustafa Qamar and Sharifullah Khan
0 3 : 2 0 P M - 0 3 : 4 0 P M	Prediction and Analysis of Pakistan Elections 2013 based on Sentiment Analysis, Muhammad Asif Razzaq, Ali Mustafa Qamar and Hafiz Syed Bilal Ali
0 3 : 4 0 P M - 0 4 : 0 0 P M	Utilizing Distinct Terms for Proximity and Phrases in the Document for Better Information Retrieval Muhammad Imran Rafique and Mehdi Hassan
0 4 : 0 0 P M - 0 5 : 0 0 P M	<b>Panel Discussion</b> <b>Venue: Main Auditorium</b>
0 5 : 0 0 P M - 0 5 : 3 0 P M	<b>Closing Ceremony</b> <b>Venue: Main Auditorium</b>
0 5 : 3 0 P M - 0 6 : 0 0 P M	<b>Tea Break</b>