Welcome Message of the INDICON 2013 Chairs

The 10th Annual Conference of the IEEE India Council (INDICON 2013), December 13-15, 2013 is being organized by IEEE Bombay Section in collaboration with IIT Bombay at Victor Menezes Convention Centre, IIT Bombay, Mumbai, India.

Over the past few years, INDICON has emerged as a well recognized and an eagerly anticipated event in India because of its high quality technical sessions and for the networking opportunities it provides.

The purpose of INDICON 2013, following the footsteps of the previous editions, is to promote activities in various technical areas by providing a forum for exchange of ideas, presentation of technical achievements and discussion of future directions. This conference brings together national and international community of experts to discuss the state-of-the-art, new research results, perspectives of future developments, and innovative applications relevant to Computational Science & Engineering, Communications, Networking, Control & Interdisciplinary Engineering, Power & Energy, VLSI, Signal Processing and related areas. INDICON is flagship conference of IEEE India Council. IEEE INDICON 2013 is the biggest INDICON ever, has the largest industry forum, exhibition, number of contributed papers, number of high-quality tutorials. INDICON 2013 had 1182 papers submitted including papers from international authors. We have selected 210 papers for oral presentation and 132 papers for poster presentation. The Technical Program of INDICON 2013 consists of one Keynote Session, five Plenary Sessions, 5 technical tracks, 34 special sessions, and 4 tutorials.

We would like to express our sincere appreciation to members and volunteers of various committees and reviewers of INDICON 2013. Special thanks to fraternity at IIT Bombay who walked an extra mile for ensuring high quality technical program. The conference with such scale will not be possible without everyone's strong commitment and efforts and support from sponsors. Last but not the least, our sincere gratitude goes to all the authors and invited speakers, for their participation and for providing the intellectual sharing on experiences.

We hope you will enjoy the Mumbai experience, while finding INDICON 2013 a fruitful and a truly memorable conference. Welcome and enjoy your stay!

Ashok Jagatia
General Chair

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Technical Program Chair

Plenary Speaker

Prof. Ashok Jhunjhunwala

Title: Can we get 50% of India's Electricity using Solar by 2030?: Decentralized Approach – a game changer

Abstract: India is starved of power today, with frequent power-cuts throughout the country. As we gear up to overcome this, can India dream of 50% of its power being generated from Solar PV? Can a decentralized approach help in not only overcoming deep power-cuts, but also expand solar installations dramatically? Surely we cannot do this if we just blindly follow the West. We need innovative solutions based on a understanding of India's specific situations. What does it take to move in that direction?

Biography: Dr.Jhunjhunwala received his B.Tech degree from IIT, Kanpur, and his MS and Ph.D degrees from the University of Maine. From 1979 to 1981, he was with Washington State University as Assistant Professor. Since 1981, he has been teaching at IIT, Madras, where he leads the Telecommunications and Computer Networks group (TeNeT). This group works with industry in the development of technologies relevant to India. It has incubated over 35 companies in the last twenty years. He chairs Rural Technology and Business Incubator (RTBI) at IIT Madras and Mobile Payment Forum of India (MPFI).

Dr. Ashok Jhunjhunwala has been awarded Padma Shri in the year 2002. He has been awarded Shanti Swarup Bhatnagar Award in 1998, Dr.Vikram Sarabhai Research Award for the year 1997, Millennium Medal at Indian Science Congress in the year 2000 and H. K. Firodia for "Excellence in Science & Technology" for the year 2002, Shri Om Prakash Bhasin Foundation Award for Science & Technology for the year 2004, Awarded Jawaharlal Nehru Birth Centenary Lecture Award by INSA for the year 2006, IBM Innovation and Leadership Forum Award by IBM for the year 2006, awarded Bernard Low Humanitarian Award in 2009, awarded "Bharat Asmita Vigyaan –Tantragyaan Shresththa Award" for the best use of Science & Technology through Innovation in 2010 and awarded Honorary Doctorates by the Institute of Blekinge Institute of Technology, Sweden in 2008 and University of Maine, USA in 2010. In 2010, he was also awarded JC Bose Fellowship in 2010 by DST, Government of India, awarded Dronacharya (2011) by TiE and recently awarded Top Innovator of Top 11 in 2011 Innovators Challenge. He is a Fellow of World Wireless Research forum, IEEE and Indian academies including INAE, IAS, INSA and NAS.

Dr. Jhunjhunwala is a Director in the Board of TTML, Polaris, 3i Infotech, Sasken, Tejas, Tata Communications and Exicom. He is member of Prime Minister's Scientific Advisory Committee.

Plenary Speaker

Prof. Vijay Bhargava

Title: On "Greening" Cellular Wireless Networks

Abstract: Currently India's telecommunications network is the second largest in the world with well over 900 million telephone subscribers. Its Internet user-base is the third largest in the world and increasingly the preferred mode of accessing Internet is over mobile devices. This has led to a sharp rise in the energy consumption by wireless networks and an associated increase in the carbon footprint. Thus network operators and regulatory bodies, such as 3GPP and ITU, are obliged to address energy efficiency leading to Green Communication. "Greening" wireless networks is a vast research discipline that needs to cover all layers of the protocol stack and system architectures, and it is important to identify the fundamental trade-offs between energy efficiency and overall performance. In this paper, we direct our focus to four important aspects of green networking: defining green metrics, bringing architectural changes to base stations, network planning, and efficient system design. We conclude the presentation with a discussion of some broader perspectives such as statistical power profiles, smart grid technology and embodied energy to achieve green cellular network technology.

Biography: Vijay Bhargava was born in Beawar, Rajasthan in 1948 and came to Queen's University, Kingston, Canada in 1966.He received his BASc, MASc and Ph.D. degrees from Queen's in 1970, 1972 and 1974 respectively. He joined the Indian Institute of Science in 1974 but returned to Canada in 1975. Currently he is a Professor in the Department of Electrical and Computer Engineering at the University of British Columbia in Vancouver, where he served as Department Head from 2003-2008. He appears on ISIHighlyCited.com as an Institute of Scientific Information Highly Cited Researcher. He is a Fellow of the IEEE, the Royal Society of Canada, the Canadian Academy of Engineering and the Engineering Institute of Canada

Vijay is a co-author (with D. Haccoun, R. Matyas and P. Nuspl) of "Digital Communications by Satellite" (New York: Wiley: 1981), which has been translated to Chinese and Japanese. He is a co-editor (with S. Wicker) of "Reed Solomon Codes and their Applications" (IEEE Press: 1994), a co-editor (with V. Poor, V. Tarokh and S. Yoon) of "Communications, Information and Network Security" (Kluwer: 2003), a co-editor (with E. Hossain) of "Cognitive Wireless Communication Networks" (Springer: 2007), a co-editor (with E. Hossain and D.I. Kim) of "Cooperative Wireless Communications Networks" (Cambridge University Press: 2011), and a co-editor (with E. Hossain and G. Fettweis) of "Green Radio Communications Networks" (Cambridge University Press: 2012). .

Vijay is very active in the IEEE and was nominated for the office of IEEE President-Elect in 1996 and 2002. He is a past President of IEEE Information Theory Society, and is currently serving as the President of the IEEE Communications Society.

Plenary Speaker

Dr. David Grier

Title: State of the Art: Where we are and where we are going

Abstract: We often need to assess the state of the field. We need to know the new technologies that are showing promise, the current work that is generating interest among researchers and practitioners, and the established ideas that are becoming a basis for innovative products. However, we often find it difficult to understand the state of the field, as a combination of self promotion, commercial interests, curious novelty usually clouds our vision. This talk will show how the IEEE library gives us a surprisingly rich and surprising portrait of computing, and how you can use it to better understand the field. It will be given by the Computer Society President, who has had to answer the question "So what is new in computing?" roughly once a week over the past year..

Biography: David Alan Grier is the 2013 President for IEEE Computer Society and has spent much of the past decade helping the Society develop new electronic products, editing its periodicals and writing for its members. He has served as editor in chief of IEEE Annals of the History of Computing, as chair of the Magazine Operations Committee and as an editorial board member of Computer. Grier formerly wrote the monthly column "The Known World" (www.computer.org/theknownworld). Outside the Society, he works as an associate professor of science and technology policy at George Washington University in Washington, DC with a particular interest in policy regarding digital technology and professional societies (www.gwu.edu/~cistp/). There, Grier has worked as a university administrator for the past 20 years and has demonstrated a capacity for organizational management. He served as leader of the undergraduate computer systems degree, director of the University Honors Program, assistant dean of engineering, and associate dean of International Affairs.

Finally, Grier has worked extensively within the computer industry. He started as a programmer and systems designer for the old Burroughs Corporation. He has also worked extensively as a consultant in the field. A more detailed biography can be found at www.dagrier.net. David Alan Grier is a writer, author and speaker on issues of technology, society, & organizations. He is a principal in the consulting firm Djaghe, LLC. He has been employed by the George Washington University in a variety of professorial and administrative roles. He is currently an associate professor in the Center for International Science & Technology Policy of the Elliott School of International Affairs .

Plenary Speaker

Prof. P. R. Kumar

Title: The Challenge of Cyberphysical Systems

Abstract: We present a historical account of paths leading to the present interest in cyberphysical systems. We outline several foundational research topics that underlie this area. These include issues in data fusion, real-time communication, clock synchronization, security, middleware, hybrid systems and proofs of correctness.

Biography: P. R. Kumar obtained his MS and DSc degrees in Systems Science and Mathematics from Washington University at St. Louis, in 1975 and 1977, respectively. From 1977-84 he was a faculty member in the Mathematics Dept. at the Univ. of Maryland Baltimore County. From 1985-2011 he was a faculty member in the ECE dept. and the Coordinated Science Laboratory at the UIUC. Currently he is at Texas A&M University, where he holds the College of Engineering Chair in Computer Engineering. Kumar is a member of the National Academy of Engg. of the USA, and the Academy of Sciences of the Developing World. He was awarded an honorary doctorate by ETH Zurich. He received the IEEE Field Award for Control Systems, the Donald P. Eckman Award of the American Automatic Control Council, the Fred W. Ellersick Prize of the IEEE Communications Society, the Outstanding Contribution Award of ACM SIGMOBILE, and the Daniel C. Drucker Eminent Faculty Award from UIUC. He is a Fellow of IEEE.

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