Call for papers
Cognitive Computing and Networking Symposium (COG)
ICNC 2015
Anaheim, California, USA, February 16-19, 2015
http://www.conf-icnc.org/2015

Symposium Co-chairs
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Scope

Cognitive computing and networking are among the fast emerging areas in modern computer communications. Dynamic spectrum access, cognitive radio, and cognitive networking are among the areas of focus under cognitive computing and networking. Fast growing wireless network traffic will soon result in an increased spectrum scarcity in certain popular bands of the wireless spectrum. On the other hand, large fractions of spectral bands are underutilized or tied under high regulations resulting in very low usage. Emerging solutions in cognitive radios and dynamic spectrum access work towards effective spectrum sharing between primary and secondary users. Measuring, sharing, billing, and opportunistically utilizing available spectrum are critical needs of future cognitive radios. Commercial cognitive radios are still a few years away. Meanwhile, applying cognition across the entire protocol stack is taking the cognitive networking in an alternate, yet important, direction. Models of protocol stacks that employ graphical models have been under active research. The current state of technology reveals the infancy of cognitive networking as evidenced by the recent prototype test beds. Policy decisions, standardization processes, industry agreements are important in realizing effective solutions for cognitive computing and networking. Therefore, cognitive communications and networking is one of the key areas of research activity in communication networking in the future decade. In addition to the civilian communications, tactical communications find cognitive radios useful for operation in net-centric warfare with an additional benefit, detection evasion in hostile environments. ICNC’15 also invites research articles on the area of tactical cognitive communications and networking.

ICNC’15 Cognitive Computing and Networking Symposium calls for papers in the topics including, but not limited to, the following:

- Dynamic spectrum management
- Dynamic spectrum access strategies
- Network Architectures for Cognitive Radios and Cognitive Networking
- Higher layer protocols and solutions for cognitive networks
- Modeling and performance analysis of spectrum access in very crowded environments
- Spectrum sharing techniques
- Cross layer framework for cognitive networks
- Cognitive computing for dynamic spectrum access
- Next generation cognitive networks
- Observations from Testbeds and implementations
- Graphical models for cognitive networking
Cognitive Network Protocol stack
Dynamic Spectrum Access Networks
Architecture and platform for Cognitive radio networks
Pricing models in dynamic spectrum access
Spectrum sensing mechanisms and network protocol support
Regulations and policy strategies in developing regions
Standardization activities in cognitive communications
Spectrum measurement methods
Models for Spectrum measurement
Efficient and broadband spectrum sensing approaches
New applications of Dynamic Spectrum Access
Cloud-centric spectrum analysis approaches
Cloud-centric Base Stations and Access Points
Interference metrics, measurements, and performance analysis
Light weight cognitive Access Points
Prototypes for Cognitive Network devices
Opportunistic Pricing, billing, and payment mechanism for dynamic spectrum access
Dynamic Spectrum access etiquettes and coexistence models
Radio resource management in cognitive networks
Market trends for secondary spectrum usage in developed and developing regions
Coordination between Industries and government agencies for quick development of market for DSA equipments
New spectrum measurement, sharing, and opportunistic usage models
Developing and developed regions and their regulatory models for spectrum access
Industry participation, standardization, software regulation, and equipment certification activities
Medium Access Control Protocols for Cognitive Radio Networks and Cognitive Networks
Routing Protocols for Cognitive Radio Networks and Cognitive Networks
Transport Protocols for Cognitive Radio Networks and Cognitive Networks
TCP adaptations for Cognitive Radio Networks and Cognitive Networks
Cross-layer optimization for cognitive radio networks and Cognitive Networks
Information-theoretic aspects of cognitive radio networks and Cognitive Networks
QoS provisioning in Cognitive radio networks and Cognitive Networks
Privacy, Trust and security issues in Cognitive radio networks and Cognitive Networks
Large scale cognitive radio network experimental prototypes and results
Storage techniques for spectrum measurements
Multi-channel Spectrum and traffic sampling techniques
Spatio-temporal models for dynamic spectrum access
Open source cognitive radios

Submission Guidelines

Please follow the author instructions at http://www.conf-icnc.org/2015/author.htm
Direct paper submission weblink of this symposium can be found at http://www.conf-icnc.org/2015/cfp.htm

Short biography of co-chairs

Dr. Rajarathnam Chandramouli

R. Chandramouli (Mouli) is the Thomas Hattrick Chair Professor of Information Systems in the Department of Electrical and Computer Engineering (ECE) at Stevens Institute of Technology and a Co-founder and Chief Strategist of
Dynamic Spectrum, LLC---a technology company offering dynamic spectrum management solutions and a Co-founder of Jaasuz (jaasuz.com)---offering advanced text mining technologies. His research spans the areas of cognitive wireless networking, text mining, social media security and analytics. Projects in these areas are supported by the National Science Foundation, National Institute of Justice, U.S. Department of Defense agencies and industry.

He was an invited member of the White House Communications Roundtable to give inputs on the National Wireless Initiative, IEEE COMSOC Distinguished Lecturer, Founding Chair of the IEEE COMSOC Technical Committee on Cognitive Networks (TCCN), TCCN's representative to the IEEE COMSOC Standards Board, Founding Editor of the IEEE Journal on Selected Areas in Communications (JSAC) – Cognitive Radio Series, Founding Editor of the Advances in Multimedia Journal, Associate Editor of the IEEE Transactions on Circuits and Systems for Video Technology, and is on the International Advisory Boards of several international conferences and journals. He has given several keynote talks.

Chandramouli is the recipient of an IEEE GLOBECOM 2008 Best Paper Award, IEEE CCNC 2006 Best Student Paper Award, NSF CAREER Award, and IEEE Richard E. Merwin Scholarship. For further information: http://www.ece.stevens-tech.edu/~mouli

Dr. B. S. Manoj

B. S. Manoj received the Ph.D degree in Computer Science and Engineering from the Indian Institute of Technology, Madras, India, in July 2004. He is a recipient of the Indian Science Congress Association Young Scientist Award for the Year 2003 and the IBM Outstanding PhD Thesis Award for the year 2004. He co-authored the widely taught text book titled Ad Hoc Wireless Networks: Architectures and Protocols (Prentice Hall PTR, New Jersey, May 2004). From February 2005-February 2006, he had worked as Post Doctoral Researcher at the California Institute of Telecommunications and Information Technology (CalIT2), University of California at San Diego. He worked also as a Research Scientist and Lecturer at the University of California, San Diego, CA where he led the team that developed Extreme Networking System, a wireless mesh network for emergency response applications and CogNet testbed, one of the earliest large scale cognitive wireless network testbed. From 2006-2009, he taught the DATA NETWORKS II at the Electrical and Computer Engineering Department and he had been teaching Networked Services (CSE 124), in 2009-10, at the Computer Science and Engineering Department at University of California San Diego. He is currently an Associate Professor at the Indian Institute of Space Science and Technology (IIST), Thiruvananthapuram, India focusing on computer networking research.

He published extensively in the areas ad hoc wireless networks, wireless mesh networks, and cognitive networking. He co-authored papers that were chosen for best paper awards at IRISS 2002, IEEE/ACM HiPC 2004, and IEEE CCNC 2008. Elsevier recognized one of his papers as Most Cited paper during the period from 2005-2010. He is a Senior Member of the IEEE, a member of the ACM, Founder secretary of ACM Trivandrum Chapter, Founding Member of the ISCRAM Association, and current Chair of IEEE ComSoc Kerala Chapter.