

**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 frame work 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.