

# Call for Papers

## Cognitive Computing and Networking Symposium

### ICNC 2017

Silicon Valley, USA, January 26-29, 2017

<http://www.conf-icnc.org/2017>

#### Symposium Co-chairs

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#### Scope

Cognitive computing and networking are closely related emerging technologies for communication in modern networked systems to meet the demand of exponentially increasing network subscriptions and data traffic. RF spectrum sensing, dynamic spectrum sharing, wireless virtualization, software defined networks, cognitive radio networks, and software-defined radios are among the areas of focus under cognitive computing and networking. Cognitive computing borrows the ideas from human cognitive systems to train networked devices to act/think and reasoning like a human mind. Cognitive networking refers to developing networks with a cognitive process (i.e. machine learning, knowledge representation, adaptive network management) that can give better service to users by learning operating environment and adapting network parameters based on the observed conditions. Applying cognition across the entire protocol stack is taking the cognitive computing and networking to the next important level of adaptive communication for networked systems. Furthermore, cognitive computing and networking are not only applicable to civilian communications, but also to tactical communications for adaptive communications in hostile environments. This symposium will focus on topics related to all aspects of cognitive computing and networking. The Cognitive Computing and Networking Symposium seeks original unpublished papers focusing on theoretical analysis, algorithm/protocol design, novel system architectures, experimental studies, emerging applications, standardizations, testbeds, etc. that report on emerging cognitive radio communications and networking technologies to improve network resource utilization, make coexistence of different wireless/mobile networks and make future networked systems autonomous and self-reconfigurable. The goal of this symposium is to bring together and disseminate the latest developments and technical solutions concerning various aspects of cognitive computing and networking technologies.

ICNC'17 Cognitive Computing and Networking Symposium calls for papers in the topics including, but not limited to, the following:

- Next generation cognitive networks and architecture
- Spectrum sensing, measurements and statistical modeling of spectrum usage
- Radio resource management in cognitive networks
- Dynamic spectrum access and sharing
- Spectrum-management regulation and policy making
- Adaptive communications in hostile environments
- Cognitive computing techniques (e.g., machine learning, information-theoretic learning)
- Mobility management and topology control
- Performance modeling and analysis
- Cross-layer designs and architectures
- Dynamic spectrum access and wireless virtualization
- Network economics and game theory

- Waveform design, interference mitigation and interference awareness for cognitive radio
- Distributed cooperative spectrum sensing and multiuser access
- Cognitive medium access control (MAC), interference management, handoff and routing protocols
- Cognitive computing for dynamic spectrum access
- Cognitive network protocol stack
- Cloud assisted cognitive networking
- Software defined radio access networks
- Cloud-centric spectrum analysis approaches
- Interference metrics, measurements, and performance analysis
- Modeling and performance analysis of spectrum access in very crowded environments
- Emerging applications and services based on cognitive radio network (e.g., cognitive femto-cell & small cell networks, public safety networks, and vehicular networks)
- Observations from testbeds and implementations
- Regulations and policy strategies in developing regions
- Standardization activities in cognitive communications
- Prototypes for cognitive network devices
- Power aware and energy efficient design
- Market trends for secondary spectrum usage in developed and developing regions
- Coordination between industries and government agencies for quick development of market for DSA equipment
- Industry participation, standardization, testbeds, software regulation, and equipment certification activities

## **Submission Guidelines**

Please follow the author instructions at <http://www.conf-icnc.org/2017/author.htm>

Direct paper submission weblink of this symposium can be found at <http://www.conf-icnc.org/2017/cfp.htm>

## **Short biography of Co-chairs**

### **Dr. Danda B. Rawat**

Danda B. Rawat is an Assistant Professor in the Department of Electrical Engineering at Georgia Southern University. He received the Ph.D. in Electrical and Computer Engineering from Old Dominion University, Norfolk, Virginia USA. His research focuses on wireless communications & networking, cyber-physical systems and cyber security. His research focuses on design, analysis and evaluation of cognitive radio networks, wireless virtualization, cyber-physical systems, software-defined networks, software-defined radio access networks, cyber-security, smart grid systems, and vehicular/wireless ad-hoc networks. His current research is supported by US National Science Foundation and Center for Sustainability grants. Dr. Rawat is the recipient of NSF Faculty Early Career Development (CAREER) Award in 2016. He has published over 120 scientific/technical articles, authored 8 books and over 15 book chapters. He has been serving as an Editor/Guest Editor for over 10 international journals. He served as a Web-Chair for IEEE INFOCOM 2016, Student Travel Grant Co-chair of IEEE INFOCOM 2015, Track Chair for Wireless Networking and Mobility Track of IEEE CCNC 2016, Track Chair for Communications Network and Protocols Track of IEEE AINA 2015, and so on. He will be serving as a Web-Chair for IEEE INFOCOM 2017, Track Chair for IEEE CCNC 2017 and BWCCA 2016. He also served as a program chair, general chair, and session chair for numerous international conferences and workshops, and served as a technical program committee (TPC) member for several international conferences including IEEE GLOBECOM, IEEE CCNC, IEEE GreenCom, IEEE AINA, IEEE ICC, IEEE WCNC and IEEE VTC conferences. He has received the Best Paper Awards at the International Conferences. He is also the recipient of Outstanding Research Faculty Award (Award for Excellence in Scholarly Activity) 2015, Allen E. Paulson

College of Engineering and Technology, Georgia Southern University. He has previously held an academic position at Eastern Kentucky University, Old Dominion University, and Tribhuvan University. He is the Founding Director of the Cyber-security, Wireless Systems and Networking Innovations (CWiNs) Research Lab at GSU. Dr. Rawat is a Senior Member of IEEE, and a member of ACM and ASEE. He is serving as a Vice Chair of the Executive Committee of the IEEE Savannah Section since 2013.

### **Dr. Marco Levorato**

Marco Levorato joined the Donald Bren School of Information and Computer Sciences, Computer Science department in August 2013. Between 2010 and 2012, He was a post-doctoral researcher with a joint affiliation at Stanford and the University of Southern California working with prof. Andrea Goldsmith and prof. Urbashi Mitra. From January to August 2013, he was an Access post-doctoral affiliate at the Access center, Royal Institute of Technology, Stockholm. He is a member of the ACM, IEEE and IEEE Comsoc society. His research interests are focused on next-generation wireless networks, signal processing, cyber-physical systems, smart city and smart energy systems. He has co-authored over 75 technical articles on these topics, including the paper that has received the best paper award at IEEE GLOBECOM (2012). He completed the PhD in Electrical Engineering at the University of Padova, Italy, in 2009. He obtained the B.S. and M.S. in Electrical Engineering summa cum laude at the University of Ferrara, Italy in 2005 and 2003, respectively. He served as workshop co-chair for ACM Mobicom 2015, publication chair for ACM Mobisys 2015, local arrangements co-chair for ACM Mobicom 2014 and co-chair for the Communication QoS and System Modeling symposium - IEEE ICNC 2015. He served as a technical program committee member for several conferences including IEEE Infocom, IEEE Globecom, IEEE ICC and IEEE SmartGridComm, and as a reviewer for several IEEE journals.