

# **IEEE GLOBECOM 2017**

## **Call for Papers for Cognitive Radio and Networks Symposium**

### **Scope and Motivation:**

Emerging cognitive radio communications and networking technologies potentially provide a promising solution to the spectrum underutilization problem in wireless access, improving the interoperability and coexistence among different wireless/mobile communications systems and making the future-generation radio devices/systems autonomous and self-reconfigurable. The goal of this symposium is to bring together and disseminate state of the art research contributions that address various aspects of analysis, design, optimization, implementation, standardization, and application of cognitive radio communications and networking technologies. The scope of this symposium includes (but is not limited to) the topics below.

### **Main Topics of Interest:**

The Cognitive Radio and Networks Symposium seeks original contributions in, but not limited to, the following topical areas:

- Challenges and issues in designing cognitive radios and cognitive radio networks
- Architectures and building blocks of cognitive radio networks
- Spectrum sensing, measurements and statistical modeling of spectrum usage
- Waveform design, modulation, and interference aggregation for cognitive radio
- Distributed cooperative spectrum sensing and multi-user access
- Cognitive medium access control, interference management and modeling
- Dynamic spectrum sharing
- Handoff and routing protocols
- Resource allocation for multi-antenna based cognitive radio communications
- Energy-efficient cognitive radio communications and networking
- Self-configuration, interoperability and co-existence issues
- Distributed adaptation and optimization methods
- Machine learning techniques for cognitive radio systems
- Architecture and implementation of database-based cognitive radio networks
- Cooperative and coordinated communications
- Economic aspects of spectrum sharing in cognitive radio networks
- Regulatory policies and their interactions with communications and networking
- Privacy and security of cognitive spectrum-agile networks
- Attack modeling, prevention, mitigation, and defense in cognitive radio systems
- Physical-layer secrecy in cognitive networks
- Modeling and performance evaluation
- Quality of service provisioning in cognitive radio networks

- Spectrum sensing and sharing for Internet of Things
- Spectrum sensing and sharing for mm-wave
- Applications and services (e.g., cognitive networking in TV whitespace, adaptation with LTE networks such as LTE-unlicensed, and integration with other merging techniques such as massive MIMO and full-duplex)
- Cognitive radio standards, test-beds, simulation tools, and hardware prototypes.

**The authors of selected papers from this symposium will be invited to submit an extended version of their work for fast-track review in the IEEE Transactions on Cognitive Communications and Networking.**

### **How to Submit a Paper:**

The submission is through EDAS. Please check IEEE Globecom 2017 website for full instructions.

### **Symposium Co-Chairs:**

- Jianwei Huang (The Chinese University of Hong Kong)
- K.P. Subbalakshmi (Stevens Institute of Technology)
- Yue Gao (Queen Mary University of London)

### **Biographies:**

**Jianwei Huang** is an Associate Professor and Director of the Network Communications and Economics Lab ([ncel.ie.cuhk.edu.hk](http://ncel.ie.cuhk.edu.hk)), in the Department of Information Engineering at the Chinese University of Hong Kong. He received the Ph.D. degree from Northwestern University in 2005, and worked as a Postdoc Research Associate at Princeton University during 2005-2007. He is the co-recipient of 8 international Best Paper Awards, including IEEE Marconi Prize Paper Award in Wireless Communications in 2011. He has co-authored five books: "Wireless Network Pricing," "Monotonic Optimization in Communication and Networking Systems," "Cognitive Mobile Virtual Network Operator Games," "Social Cognitive Radio Networks", and "Economics of Database-Assisted Spectrum Sharing". He has served as a Founding Associate Editor of IEEE Transactions on Cognitive Communications and Networking, an Associate Editor of IEEE Transactions on Wireless Communications, and a Founding Associate Editor of IEEE Journal on Selected Areas in Communications - Cognitive Radio Series. He is the Vice Chair of IEEE ComSoc Cognitive Network Technical Committee and the Past Chair of IEEE ComSoc Multimedia Communications Technical Committee. He has served as a Distinguished Lecturer of IEEE Communications Society since 2015. At the age of 37, he was elevated to IEEE Fellow for his contributions to resource allocation in wireless cellular and cognitive radio systems, and his seminal work on the economics based analysis and design of modern wireless communication systems.

**K.P. Subbalakshmi** is a Professor, Department of Electrical and Computer Engineering at Stevens Institute of Technology. Her research interests are in Cognitive Radio Networking, Cognitive Cloud Computing, Dynamic Spectrum Access security, Social Media Analysis and Forensics and their applications to smart cities and connected communities. She was named a Jefferson Science Fellow in 2016. As a JSF she worked at the US Department of State, on technology and policy issues in 5G networks, IoT and Smart and Connected Communities during the Academic Year 2016-2017. She is also a Co-Founder of two technology start-ups that commercialize her work on cognitive radio networks and text analytics. She served as a Subject Matter Expert for the *National Spectrum Consortium* in 2015. She is a Founding Associate Editor of the *IEEE Transactions on Cognitive Communications and Networking*. She is the Founding Chair of the Special Interest Group on Security, IEEE COMSOC's Technical Committee on Cognitive Networks. She is a recipient of the New Jersey Inventors Hall of Fame, Innovator Award.

**Yue Gao** is a Senior Lecturer (Associate Professor) and Director of Whitespace Machine Communication Lab ([wmc.eecs.qmul.ac.uk](http://wmc.eecs.qmul.ac.uk)) in the School of Electronic Engineering and Computer Science at Queen Mary University of London in United Kingdom. He worked as Research Assistant and Lecturer (Assistant Professor) in the School of Electronic Engineering and Computer Science at QMUL. He received his Bachelor degree from Beijing University of Posts and Telecommunications in China in 2002, and his MSc and PhD degrees in telecommunications and microwave antennas from QMUL in 2003 and 2007, respectively. He has authored and co-authored over 100 peer-reviewed journal and conference papers, 2 best paper awards, 2 patents and 2 licensed works to companies, and one book chapter. He is a Senior Member of the IEEE and has served as the Signal Processing for Communications Symposium Co-Chair for IEEE ICC 2016, and is serving Publicity Co-Chair for GLOBECOM 2016, and the General Co-Chair of the IEEE WoWMoM 2017.