

Call for papers

Cognitive Computing and Networking Symposium

ICNC 2018

Maui, Hawaii, USA, March 5-8, 2018

<http://www.conf-icnc.org/2018/>

Symposium Co-chairs

Wei Yu, Towson University, USA, wyu@towson.edu

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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. Techniques related to 5G, edge/fog computing, RF spectrum sensing, dynamic spectrum sharing, wireless virtualization, software defined networks, cognitive radio networks, software-defined radios, cyber-physical systems/Internet of Things, and public safety communication 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 The Cognitive Computing and Networking Symposium seeks original unpublished papers focusing on theoretical analysis, algorithm/protocol design, novel system architectures, experimental studies, emerging applications, standardizations,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 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:

- Cloud and edge computing assisted cognitive computing and networking
- Next generation wireless networks (ultra-dense network, millimeter-wave communications, etc.)
- Machine to machine and device to device communication
- Internet-of-Things, cyber-physical systems, and emerging applications (public safety, etc.)
- The application of economics-based theory (game/auction theory) in cognitive computing and networking
- Resource management in cognitive computing and networking
- New cognitive computing and networking architecture
- Spectrum sensing, measurements and statistical modeling of spectrum usage
- Dynamic spectrum access and sharing
- Spectrum-management regulation and policy making
- Cognitive computing techniques (machine learning, information-theoretic learning, etc.)
- Performance modeling and analysis
- Cross-layer designs and architectures
- Wireless network virtualization
- Cognitive computing for dynamic spectrum access

- Cognitive network protocols
- Software defined radio access networks
- Observations from testbeds and implementations
- Regulations and policy strategies in developing regions
- Standardization activities in cognitive communications
- Prototypes for cognitive computing and cognitive network
- 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/2018/author.htm>

Direct paper submission for this symposium can be found at <http://www.conf-icnc.org/2018/cfp.htm>

Short Biography of Co-chairs

Dr. Wei Yu

Dr. Wei Yu is currently an Associate Professor in the Department of Computer and Information Sciences at Towson University. His research interests include Cyber Security and Privacy, Computer Networks, Cyber-Physical Systems, and Distributed Computing. His research is currently supported by federal agencies. He published over 200 papers, including articles in premier security and networking conferences such as IEEE S&P, ACM CCS, IEEE INFOCOM, ICDCS and journals such as IEEE ToN, TDCS, TC, TPDS, TMC, and TVT. He received the University System of Maryland (USM) Wilson H. Elkins Professorship in 2016, the University System of Maryland (USM) Regents' Faculty Award for Excellence in Research in 2015, the NSF Faculty Early Career Development (CAREER) award in 2014, the 2012 Excellence in Scholarship Award, Fisher College of Science and Mathematics at Towson University, the Best Paper Award from the 2016 IEEE International Performance Computing and Communications Conference (IPCCC), the 2013 and 2008 IEEE International Conference on Communications (ICC), respectively. He is currently serving as an Associate Editor for the IEEE Transactions on Information Forensics and Security (TIFS) and IEEE Access.

Dr. Nicolo Michelusi

Nicolò Michelusi is currently an Assistant Professor in the Department of Electrical and Computer Engineering at Purdue University, and is serving as Associate Editor for the *IEEE Transactions on Wireless Communications*. During 2013-2015, he has been a post-doctoral research fellow at the Ming Hsieh Department of Electrical Engineering, University of Southern California. He received the BS (2006) and MS (2009) degrees in Electrical Engineering, both with honors, from University of Padova, Italy, the MS degree in Telecommunication Engineering from Technical University of Denmark (2009), and the PhD degree in Electrical Engineering from University of Padova in 2013. He was awarded a scholarship from the Fondazione Ing. Aldo Gini (2010), the Toni Mian scholarship in 2010, and the Isabella Sassi Bonadonna award by the Italian Association of Electronics, Automation, Informatics and Communications (AEIT) in 2013. His current research interests are in the areas of dynamic control in wireless communications, IoT with energy harvesting, 5G, and millimeter wave communications. He has published over 50 papers, including journals in IEEE TWC, TCOM, TCCN, JSAC, TSP, and TMBMC. His research is currently supported by NSF and DARPA.

Dr. Marco Levorato

Marco Levorato joined the Computer Science department at UC Irvine in August 2013. Between 2010 and 2012, he held a joint post-doctoral researcher position at Stanford and the University of Southern California. From January to August 2013, he was an Access post-doctoral affiliate at the Access center, Royal Institute of Technology, Stockholm. 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. Dr. Levorato is a Hellman fellow. He is a member of the ACM, IEEE and IEEE Comsoc society. His research interests are focused on next-generation wireless networks, IoT,

signal processing, cyber-physical systems, smart city and smart energy systems. He has co-authored over 85 technical articles on these topics, including the paper that has received the best paper award at IEEE GLOBECOM (2012). He served in the organizing committee of several IEEE and ACM conferences, including IEEE Secon 2017, IEEE SmartGridComm 2017, IEEE WCNC 2017 (M2M Communications and IoT workshop), ACM Mobicom 2014 and 2015, ACM Mobisys 2015, IEEE ICNC 2015 and 2017, and as a reviewer for several IEEE journals.