

# Call for Papers

## Machine Learning for Communications and Networking (MLCN)

### ICNC 2019

Honolulu, Hawaii, USA, Feb 18-21, 2019  
<http://www.conf-icnc.org/2019/>

## Symposium Co-chairs

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## Scope

Machine learning has shown significant potentials in facilitating human-centered cognitive systems, including image/video recognition, natural language and text analysis, finance, economics, and market analysis, medical diagnostics, robotics and autonomous vehicle, computational biology, cyber security, among others. The same potential can be expressed to enable the design and operations of complex communication and networking systems that connect massive number of users with diversified quality of service requirements. The emerging big data analytics, cloud/edge computing, software defined networking, and other relevant technologies provide opportunities for applying machine learning in communication and networking systems by studying the behaviors of these systems and further improving their performance and manageability. With machine learning, communication and networking systems can become cognizant, implementing agile reconfiguration and optimization processes based on measured data. As a result, the users can receive a better service, as enabled by the learning of the operating network environment and by the continuous adaptation of communication and network parameters as the observed conditions evolve.

The Machine Learning for Communication and Networking (MLCN) Symposium will focus on topics related to all aspects of machine learning applied to communication and networking systems. This symposium seeks original unpublished papers focusing on theoretical analysis, algorithm/protocol design, novel system architectures, experimental studies, emerging applications, standardizations, testbeds, etc. The ultimate goal of this symposium is to bring together and disseminate the latest developments and technical solutions concerning all facets of the broad area of machine learning for communication and networking systems, including emerging intelligent and/or self-aware communications and networking technologies to improve network resource utilization and optimization, and make future communication and networking systems intelligent, autonomous, efficient, and trustworthy.

The ICNC'19 Machine Learning for Communication and Networking (MLCN) symposium calls for original, previously unpublished papers in the topics including, but not limited to, the following:

- Machine learning for communication and network operation and control
- Machine learning for communication and network resource optimization

- Machine learning for cognitive communication and networks architecture
- Machine learning for communication and network security management
- Machine learning for self-aware network management
- Machine learning for the Internet of Things
- Machine learning for cyber-physical systems
- Machine learning-enabled communication and network big data analytics
- Machine learning-enabled cloud/edge/fog computing for communication and networking systems
- Machine learning-driven communication network theory and algorithms
- Machine learning for RF signal processing
- Machine learning for collaborative spectrum sharing
- Machine learning for distributed communications and sensing
- Machine learning for next-generation cognitive networks
- Machine learning for next-generation wireless networks such as 5G networks
- Machine learning for new network architectures such as software-defined networking and network function virtualization
- Machine learning for constrained networks such as sensor networks, tactical networks, etc.
- Machine learning for supporting ultra-low latency and highly reliable communications

## Submission Guidelines

Please follow the author instructions at <http://www.conf-icnc.org/2019/author.htm>

Direct paper submission for this symposium can be found at <http://www.conf-icnc.org/2019/cfp.htm>

**Note: the best papers accepted in this symposium will be considered for publication in *IEEE Transactions on Cognitive Communication and Networking*.**

## Short biography of Co-chairs

**Dr. Danijela Cabric** is Professor in the Electrical and Computer Engineering Department at the University of California, Los Angeles. Her research interests include novel radio architectures, signal processing, communications, machine learning and networking techniques for cognitive radio, 5G and massive MIMO systems. Dr. Cabric received the Samuelli Fellowship in 2008, the Okawa Foundation Research Grant in 2009, Hellman Fellowship in 2012 and the National Science Foundation Faculty Early Career Development (CAREER) Award in 2012. She served as an Associate Editor in IEEE Journal on Selected Areas in Communications (Cognitive Radio series) and IEEE Communications Letters, and TPC Co-Chair of 8th International Conference on Cognitive Radio Oriented Wireless Networks (CROWNCOM) 2013. She is now an Associate Editor of IEEE Transactions of Cognitive Communications and Networking. She is a Senior Member of IEEE and ComSoc distinguished lecturer.

**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, TPDFS, TMC, TSC, SMC, and TVT. He has been the University System of Maryland (USM)

Wilson H. Elkins Professorship since 2016, received 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 2017 International Conference on Wireless Algorithms, Systems, and Applications (WASA), 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. Paolo Casari** received the PhD in Information Engineering in 2008 from the University of Padova, Italy. After being on leave at the Massachusetts Institute of Technology in 2007, his research progressively focused on underwater communications and networks. He collaborated to several funded projects including CLAM (FP7), RACUN (EDA), and several US ARO, ONR and NSF initiatives. He is the PI of the NATO SPS project ThreatDetect, the scientific coordinator of the EU H2020 RECAP project, and of the EU H2020 SYMBIOSIS project. Previously, he was Technical Manager of the Italian NAUTILUS and WISEWAI projects. In 2015, he joined the IMDEA Networks Institute, Madrid, Spain, where he leads the Ubiquitous Wireless Networks group. He served in the TPC or organizing committee of several conferences, has been guest editor of a special issue of the Hindawi Journal of Electrical and Computer Engineering on "Underwater Communications and Networking," and is currently guest editor of a special section of IEEE Access on the same topic. He is co-recipient of the IEEE WPNC 2019 Best Paper Award. His research interests lie in the broad area of optimal protocol design and communications in challenged networks, machine learning, cloud and edge computing, and wireless positioning.