IEEE ICC®

IEEE International Conference on Communications (ICC 2021)

14-18 June 2021 // Montreal, QC, Canada

Connectivity – Security – Privacy

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Call for Papers for
Symposium on Selected Areas in Communication
Track on Machine Learning for Communications Track

Track Co-Chairs

- **Marios Kountouris, EURECOM, France, marios.kountouris@eurecom.fr**
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Scope and Motivation

Machine learning (ML) is a prominent and rapidly growing research topic in wireless communications, both in academia and industry. Our discipline has been mostly driven by analytic mathematical models. ML brings along a methodology that is data-driven, and carries a major paradigm shift in the way communication systems are designed, analyzed, and optimized.

While ML has been successfully applied in the fields of computer vision and natural language processing, among many others, its application in the field of wireless communications is still in an exploration phase. ML has recently emerged as a promising enabler for flexible and robust designs and deployment of physical (PHY), medium access control (MAC), and network (NET) layers.

This SAC track aims to foster research and innovation in the application of ML for communication systems and provides a first-tier platform for the dissemination of fundamental and applied research results. Submissions related to algorithmic developments in ML that tackle the specific constraints posed by wireless communications (e.g., low latency, massive connectivity, distributed architecture) and experimental demonstrations are also encouraged.

Topics of Interest

We invite submissions of unpublished works on the theory and application of ML to communications, as well as the proposals of new ML algorithms or architectures. We do not restrict the type of ML techniques. A non-exhaustive list of relevant topics is given below.

- ML empowered transceiver design and channel coding
- ML driven techniques for radio environment awareness and spectrum access

- ML based enhancements for channel modeling, including non-traditional communications mediums (optical, quantum, molecular, biological, etc.)
- ML techniques for nonlinear signal processing
- Distributed/decentralized machine learning, decision making, and edge intelligence
- ML framework for joint communication, computation, and control
- (Deep) Reinforcement Learning for resource management & optimization
- Low-complexity/low-power deep learning hardware implementations
- Transfer learning, few-shot learning, and meta-learning in communication systems
- Privacy and security preserving training over communications networks

Important Dates

Paper Submission: 12 October 2020
Notification: 25 January 2021
Camera Ready and Registration: 22 February 2021

How to Submit a Paper

All papers for technical symposia should be submitted via EDAS. Full instructions on how to submit papers are provided on the IEEE ICC2021 website: https://icc2021.ieee-icc.org/