Call for Papers

The 2nd International Workshop on Network Intelligence

NI 2019

"Machine Learning for Networking"

in conjunction with IEEE Infocom 2019
http://infocom2019.ieee-infocom.org/
http://ni.committees.comsoc.org/ni-workshop-2019/

29 April – 2 May 2019 – Paris, France

Technically Sponsored by IEEE Communications Society, Technical Committee on Cognitive Networking, Technical Committee on Big Data, IEEE Network Intelligence Emerging Technologies initiative (IEEE NI ETI)

Network Intelligence considers the embedding of Artificial Intelligence (AI) in future networks to fasten service delivery and operations, leverage Quality of Experience (QoE) and guarantee service availability, also allowing better agility, resiliency, faster customization and security. This concept inherits the solid background of autonomic networking, cognitive management, and artificial intelligence. It is envisioned as mandatory to manage, pilot and operate the forthcoming network built upon SDN, NFV and cloud.

The main goal of the Network Intelligence Workshop is to present state-of-the-art research results and experience reports in the area of network intelligence, addressing topics such as artificial intelligence techniques and models for network and service management; smart service orchestration and delivery, dynamic Service Function Chaining, Intent and policy based management, centralized vs. distributed control of SDN/NFV based networks, analytics and big data approaches, knowledge creation and decision making. This workshop offers a timely venue for researchers and industry partners to present and discuss their latest results in Network Intelligence.

The main topic of this NI 2019 edition is "Machine Learning for Networking" which puts the attention on the particular application of machine learning tools to the optimization of next generation networks. Machine and deep learning techniques become increasingly popular and achieve remarkable success nowadays in many application domains, e.g., speech recognition, bioinformatics and computer vision. Machine learning is capable to exploit the hidden relationship from voluminous input data to complicated system outputs, especially for some advanced techniques, like the deep learning. Moreover, some other techniques, e.g., reinforcement learning, could further adapt the learning results in the new environments to evolve automatically. These features perfectly match the complex, dynamic and time-varying nature of today's networking systems.

This workshop presents state-of-the-art research in machine learning for networking. Both theoretical and system papers will be considered, to present novel contributions in the field of machine learning, deep learning and, in general, network intelligent tools, including scalable analytic techniques and frameworks capable of collecting and analyzing both online and offline massive datasets, open issues related to the application of machine learning into communications and networking problems and to share new ideas and techniques for machine learning in communication systems and networks. The topics of interest include (but not limited to):

- Deep and Reinforcement learning for networking and communications in networks
- Data mining and big data analytics in networking
- Protocol design and optimization using AI/ML
- Self-learning and adaptive networking protocols and algorithms
- Intent & Policy-based management for intelligent networks
- Innovative architectures and infrastructures for intelligent networks
- AI/ML for network management and orchestration
- Methodologies for network problem diagnosis, anomaly detection and prediction
- Network Security based on AI/ML techniques
- AI/ML for multimedia networking
- AI/ML support for ultra-low latency applications
- AI/ML for IoT
- Open-source networking optimization tools for AI/ML applications
- Experiences and best-practices using machine learning in operational networks
- Machine learning for user behavior prediction

- AI/ML for network slicing optimization in networking
- AI/ML for service placement and dynamic Service Function Chaining
- AI/ML for C-RAN resource management and medium access control
- Decision making mechanisms
- Routing optimization based on flow prediction network systems
- Bio-inspired learning for networking and communications
- Protocol design and optimization using machine learning
- Data analytics for network and wireless measurements mining
- Big data analysis frameworks for network monitoring data
- Novel context-aware, emotion-aware networking services
- Modeling and performance evaluation for Intelligent Network
- Intelligent energy-aware/green communications
- Machine learning and data mining for networking
- Transfer learning and reinforcement learning for networking system
- Network anomaly diagnosis through big networking data and wireless
- Machine learning and big data analytics for network management
- Big data analytics and visualization for traffic analysis
- Fault-tolerant network protocols using machine learning
- Experiences and best-practices using machine learning in operational networks

This workshop is supported by IEEE ComSoc Emerging Technical Initiative on Network Intelligence, technically sponsored by IEEE Communications Society, Technical Committee on Cognitive Networking, and Technical Committee on Big Data.

SUBMISSION LINK

Papers must be submitted electronically as PDF files, formatted for 8.5x11-inch paper. The length of the paper must be no more than 6 pages in the IEEE double-column format (10-pt font). Papers should neither have been published elsewhere nor being currently under review by another conference or journal. The reviews will be single blind. At least one of the authors of every accepted paper must register and present the paper at the workshop. Accepted papers will be published in the combined INFOCOM 2019 Workshop proceedings and will be submitted to IEEE Xplore.

EDAS link for paper submission: http://edas.info/N25585

Important dates

- Paper submission deadline: December 30, 2018
- Acceptance notification: February 18, 2019
- Camera ready due: March 7, 2019

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