

CALL FOR PAPERS



Recent advances in artificial intelligence (AI) and cloud services are key technologies to enable autonomous networks. These networks are designed to operate with minimal or no human intervention and be able to self-configure, self-monitor, and maintain itself independent during their operation.

Network technology breakthroughs have been driving users' expectations on better services, which in turn increase management complexity for network providers. Under the ever-increasing complexity on network operation and management, fully-automated or autonomous networks may be the answer. From this perspective, networks must become smarter, more agile, and more responsive. However, to achieve this, autonomous networks must rely on dynamic connections, big data, machine learning, embedded sensors, and significant computing and storing capabilities that provide a level of awareness and control.

The main focus of HPSR 2020 – the 21st edition of HPSR conference – will be to assess how breakthrough changes occurring to networks and telecom are affecting areas related to switching and routing, and communication networks in general. We are soliciting original and thought-provoking works on big-data, data-analytics, cloud services, and machine-learning techniques applied to networking and switching and routing. Works on autonomous networks, 5G, IoT, Industry 4.0, social networks, network, cybersecurity, virtualization, and other advanced topics are also welcome. Research works on the following topics, but not limited to, are welcome for submission through the following symposia:

High-Performance High Functionality Architectures Symposium

- Switching support to Extended reality (including virtual, augmented, and mixed reality)
- Routing and resource allocation for Tactile Internet
- High-speed packet processors
- Address lookup algorithms, packet classification, scheduling, and dropping
- Efficient data structures for networking applications
- Switching, bridging, and routing protocols whether wide-area or data centers
- Optical switching and routing
- Multiprocessor networks
- Network management
- Traffic characterization and engineering
- Power-aware switching, bridging, and routing protocols
- Nano-communication networks
- Application of data science and analysis on high-performance networks
- Applications of GPU on network functions

Intelligent Communications and Networks Symposium

- Application of data analytics to switching and routing
- Machine-learning based routing and resource-allocation algorithms
- Traffic monitoring and modeling applied to switching and routing
- Traffic predictions in routing and resource assignment
- Switching architectures for 5G applications
- High performance, programmable networks for the Internet of things
- Dynamic bandwidth access and management for smart-factory/Industry 4.0 applications

Autonomous Networks Symposium

- Network performance for Human-Agent-Robot Teamwork (HART)
- Multi-access/Mobile Edge Computing (MEC)
- Blockchain technologies
- Decentralized applications (DApps)
- Decentralized autonomous organizations (DAOs)
- Software-defined networking
- Network and switch slicing
- Computation offloading
- Architectures of high-performance switches and routers, with a focus towards reconfigurable pipelines (P4, Openflow, etc.)
- Autonomous Resource allocation

Network Security Symposium

- Network security.
- Next generation networks and Internet
- Cloud and data center security
- Intrusion detection with AI
- Virtual Private WANs
- Securing in SDN and networking slicing
- Support for the security of social networks
- Virtualized network functions (e.g., firewalls, intrusion detection systems, load balancers, etc.) built or managed using software-defined networks

Important Dates:

Paper Submission Due: **January 22, 2020**

Acceptance Notifications: March 15, 2020

Author Registration Deadline: March 15, 2020

Final Version Submission Due: March 20, 2020

Technical Sessions Dates: May 12-14, 2020

Organizing Committee:

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For more information about this conference, please visit <https://hpsr2020.ieee-hpsr.org/>