

CALL FOR PAPERS



As driven by users' expectations on better information services and pushed by the innovating technologies spanning from optical networks to beyond 5G (6G), the Next Generation Networks (NGN) and future communication system design will integrate space, air, and ground network segments to form a large-scale, autonomous and yet complicated space-air-ground integrated network that provides ubiquitous and seamless wireless connectivity for Internet of Everything. New networking technologies are needed to efficiently and effectively cope with the ever-increasing complexity of network operation and management for network providers, so as to achieve fully-automated, highly-autonomous and advanced-intelligent networks.

The main focus of the HPSR 2022 – the 23rd edition of HPSR conference – will be to assess how breakthrough changes occurring to networks and telecom are affecting areas related to switching, routing, computing and communication networks in general. We are soliciting original and thought-provoking works on big data, data analytics, cloud/edge services, and machine-learning techniques applied to networking, computing, switching and routing. Works on autonomous networks, 5G and beyond, IoT, Industry 4.0, social networks, satellite and space networks, 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
- Quantum networking

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
- Integrated caching, computation, and communications
- Traffic predictions in routing and resource assignment
- Switching architectures for 5G and beyond applications
- High performance, programmable networks for the Internet of things
- Dynamic bandwidth access and management for smart-factory/Industry 4.0 applications
- Deep-learning technologies for next generation networks
- Entanglement routing

Important Dates:

Paper Submission Due: **March 7, 2022**
Acceptance Notifications: April 20, 2022
Author Registration Deadline: May 4, 2022
Final Version Submission Due: May 4, 2022
Technical Sessions Dates: June 6-8, 2022

Organizing Committee:

General Chair
Jiajia Liu
Northwestern Polytechnical University, CHINA

General Co-chair
Nirwan Ansari
New Jersey Institute of Technology, USA

Autonomous Networks Symposium

- Space-air-ground integrated networks (SAGIN)
- Network performance for Human-Agent-Robot Teamwork (HART)
- Multi-access/Mobile Edge Computing (MEC)
- Intelligent and connected vehicular networks
- 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 and privacy protection
- Next generation networks and Internet security
- 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
- Security in virtualized network functions built or managed using software-defined networks

Program Chairs

Bomin Mao, Northwestern Polytechnical University, CHINA
Yuanqiu Luo, Futurewei, USA
Symeon Papavassiliou, National Technical University of Athens, Greece