

# IEEE 20<sup>TH</sup> INTERNATIONAL CONFERENCE ON HIGH PERFORMANCE SWITCHING AND ROUTING

26 - 29 May 2019 // Xi'an, China

## CALL FOR SUBMISSIONS

The paradigms of software-defined networking (SDN) and network function virtualization (NFV) are the two major break-through innovations that have mostly and most profoundly impacted the world of switching and routing in the latest years. This led to novel approaches that leverage hardware-software co-design techniques, or exploit high-performance programmable data planes or fast network processing frameworks, such as P4, NetFPGA, OpenState, etc.

We are today welcoming another important revolution. Big data, data analytics, data mining, machine learning, network monitoring and traffic prediction are the new topics galvanizing researchers in academia and business developers in telcos, equipment-vendors and start-ups of the ITC sector.

A fast innovation is also occurring in the application scenario, with the new "verticals" of the next-to-come 5G era: Internet of things, smart factory, Industry 4.0, content distribution, automotive, just to mention the most popular ones.

The main focus of HPSR 2019 – the 20th edition of HPSR conference! - will be to assess how the break-through changes occurring to networks and telecom are affecting the more specific area of switching and routing. We are strongly soliciting all researchers to submit their work on big-data, data-analytics and machine-learning techniques applied to switching and routing, especially for 5G, IoT, Industry 4.0 and other advanced verticals. This obviously does not exclude contributions about more traditional topics in switching and routing, which will be welcomed as well.

### EXAMPLES OF RESEARCH AREAS CONSIDERED IN IEEE HPSR 2019

- 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
- Routing and resource allocation for Tactile Internet
- Network performance for Human-Agent-Robot Teamwork (HART)
- Multi-access/Mobile Edge Computing (MEC)
- Switching support to Extended reality (including virtual, augmented, and mixed reality)
- Blockchain technologies
- Decentralized applications (DApps)
- Decentralized autonomous organizations (DAOs)
- Virtualized network functions (e.g., firewalls, intrusion detection systems, load balancers, etc.) built or managed using software-defined networks
- Software defined networking
- Network and switch slicing
- Virtual Private WANs
- Architectures of high-performance switches and routers, with a focus towards reconfigurable pipelines (P4, Openflow, etc.)
- Network security
- Next Generation 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

#### General Co-Chairs

Achille Pattavina (Politecnico di Milano, Milan, Italy)  
Jiandong Li (Vice President of Xidian University, Xi'an, China)

#### Tutorial Chair

Stefano Bregni (Politecnico di Milano, Italy)

#### TPC Co-chairs

Xiaohong Jiang (Future University, Hakodate, Japan)  
Martin Maier (Institut National de la Recherche Scientifique, Montreal, Canada)  
Guido Maier (Politecnico di Milano, Milan, Italy)  
Yulong Shen (Vice Dean of Xidian University, Xi'an, China)

## IMPORTANT DATES

### Paper Submission Due

1 March 2019 (Deadline Extended)

### Acceptance Notifications

9 April 2019

### Final Version Submission Deadline

19 April 2019

### Author Registration Deadline:

3 May 2019

### Technical Sessions Dates:

26-29 May 2019

## TUTORIAL PROPOSAL SUBMISSION

### Proposal Submission Due

1 March 2019 (Deadline Extended)

### Acceptance Notification

15 March 2019

### Contracts Signed

1 April 2019

### Presentation Materials Due

15 April 2019

### Tutorial Date

26 May 2019

## PAPERS SUBMISSION GUIDELINES

Submitted papers must be unpublished and should not be submitted elsewhere at the same time. Accepted papers should not exceed 6 pages in two-column IEEE Transactions style. Accepted papers longer than 6 pages will be charged for each extra page. Papers cannot be longer than 8 pages. Papers should be submitted as PDF files through the EDAS system. All submitted papers will be subject to three independent reviews.

To be published in the IEEE HPSR 2019 Conference Proceedings and to be eligible for publication in IEEE Xplore®, an author of an accepted paper is required to register for the conference at the full (member or non-member) rate and the paper must be presented by an author of that paper. Non-refundable registration fees must be paid prior to uploading the final IEEE formatted, publication-ready version of the paper. For authors with multiple accepted papers, one full registration is valid for up to 2 papers.

Papers can be registered by accessing EDAS or by using the following direct link: <https://edas.info/newPaper.php?c=25185>

Top scored papers will be invited to submit an extended version of their work to a Special Issue of the Elsevier Journal of Optical Switching and Networking (OSN).

## TUTORIAL SUBMISSION GUIDELINES

IEEE HPSR 2019 seeks half-day tutorial proposals on new and emerging topics within the scope of the conference (please refer to the above list of possible topics).

The proposal (maximum 5 pages) should concisely describe the content and objectives of the tutorial, and must include:

- Title of the tutorial
- Abstract, objectives, and motivation
- Timeliness and intended audience
- Name, affiliation, and a short biography of each tutorial speaker
- A description of the technical issues that the tutorial will address, emphasizing its timeliness
- An outline of the tutorial content, including its tentative schedule
- If appropriate, a description of the past/relevant experience of the speaker(s) on the topic of the tutorial
- A description of previous tutorial experience of the speaker(s), and past versions of the tutorial
- State if a similar tutorial has been offered in recent IEEE ICC or GLOBECOM (last two years) and how your tutorial differs.

Proposals should be submitted in a single PDF file, not exceeding 5 pages, by email to the Tutorial Chair Stefano Bregni ([bregni@elet.polimi.it](mailto:bregni@elet.polimi.it)).

Questions regarding HPSR 2019 Tutorials should be directed to the Tutorial Chair Stefano Bregni ([bregni@elet.polimi.it](mailto:bregni@elet.polimi.it)) and the TP Co-Chair Guido Maier ([maier@elet.polimi.it](mailto:maier@elet.polimi.it)).

## CONFERENCE LOCATION: XI'AN, PEOPLE'S REPUBLIC OF CHINA

HPSR 2019 will be the 20th edition of High Performance Switching and Routing, an important milestone in the history of one of the most traditional events of IEEE, and of IEEE Communication Society in particular. We did our best to locate HPSR 2019 conveniently in time and space. The conference will start right after the end of ICC 2019, that will be held in Shanghai: so, if you live far from China, you will have the opportunity to attend both the conferences in a single overseas travel. Moreover, to celebrate the 20th anniversary of HPSR, we have chosen an outstanding and regal location.

Xi'an is the capital of Shaanxi Province, People's Republic of China. One of the oldest cities in China, Xi'an is the oldest of the Four Great Ancient Capitals, having held the position under several of the most important dynasties in Chinese history. Xi'an is very rich of historic spots that can be visited while attending HPSR 2019. In addition to traditional Chinese historic sites, such as the Bell Tower and Drum Tower, The Giant Wild Goose Pagoda and Small Wild Goose Pagoda, outstanding historic sites are located in Xi'an: the Mausoleum of Qin Shi Huang, the first Emperor of unified China, and his Terracotta Army, candidate for the eighth wonder of the world.