Tentative Outline

Next-Generation Network Architecture, Algorithms, and Security

Guest Editor: Dr. Yuchen Liu

Scope of the Thematic Issue:

Design of new network architectures, algorithms and protocols is one of the fundamental challenges in next-generation networking. To this end, novel networking techniques and applications are required for advancing today's complex communication networks. This thematic issue provides researchers, industry professionals and practitioners with a forum to present the latest research results in the rapidly evolving areas of network architectures, network algorithms and protocols, and security. We solicit original and unpublished research work on theoretical exploration, network design and optimization, evaluations, and any other innovations in communication networks.

Keywords: Network Architecture; Protocol; Network Security; Machine Learning; Simulation; Wireless Networking; Digital Twin; VR Networks.

Sub-topics:

- New centralized-RAN, could-RAN, and open-RAN architectures.
- Content-centric networking: caching, naming, distribution, load balancing, resiliency.
- Millimeter-wave/Terahertz wireless communication and networking.
- Free space optical (FSO) networks and visible light communication (VLC).
- Cross-domain wireless networking.
- High speed and parallel processing architectures for next generation routers and switches.
- Internet survivability and network resilience strategies.
- Next-generation network management and control.
- Next-generation network simulation.
- Digital twin network and applications.
- Virtual reality-based network, and immersive applications.
- Mobile security: device, application, data, and content.
- Next-generation anomaly, intrusion, and attack detection/prevention.
- Self-protection and self-organization networking.
- Machine learning and big data for next-generation networking.
- Networking for machine learning and AI.
- Next-generation cellular, Wi-Fi and vehicular networks.
- Security, privacy, and trust for next-generation networks.
- Network configuration and misconfiguration diagnosis.
- Blockchain network architecture, algorithms and protocols.

Schedule:

➢ Complete Thematic issue submission deadline: **September 15, 2023**

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