Communication QoS, Reliability & Modeling Symposium

Co-Chairs

- Ayman Radwan, Instituto de Telecomunicações (IT) and Instituto Superior Tecnico (IST) Portugal. < aradwan@av.it.pt >
- Kenji Kanai, The University of Tokyo, Japan. < kkanai@g.ecc.u-tokyo.ac.jp >
- Javier Berrocal, Universidad de Extremadura, Spain. < jberolm@unex.es >

Scope and Motivation

In today's rapidly evolving digital landscape, the quality and reliability of communication networks have never been more critical. The continuous expansion of applications across diverse sectors demands robust infrastructures capable of delivering consistent Quality of Service (QoS) and Quality of Experience (QoE). The emergence of new technologies such as 5G/6G, IoT, AI/ML, and the increasing prevalence of different verticals, such as smart cities, autonomous systems, and Industry 4.0 are driving the need for advanced modeling, reliability, and QoS methodologies.

The Communication QoS, Reliability, and Modeling (CQRM) Symposium provides an interesting forum to discuss the latest research advances in these areas. The symposium covers a broad range of topics, emphasizing the importance of network resiliency, security, and the ability to support heterogeneous environments with varying requirements. The goal is to address the challenges of designing, managing, and optimizing networks to meet the demanding needs of modern applications and future technologies, in terms of QoS, QoE, resiliency, security, and reliability.

Topics of Interest

We solicit original contributions in (but not limited to) the following areas:

- AI/ML-based enhancements for QoS/QoE
- Cross-layer design, modeling, and optimization
- Design and evaluation of energy-efficient network
- Design and evaluation of Software Defined Networking (SDN) and Network Function Virtualization (NFV)
- Quality and performance evaluation in beyond 5G/6G wireless and mobile networks, including NTN
- Design and evaluation of microservices-based networking for 5G/6G-enabled edge networks
- Design and performance evaluation of application/service-oriented networking
- Design and performance evaluation of multi-domain and multi-tenant 5G/6G platform, including NTN
- Scalability and performance evaluation in smart city, smart home, and crowd sensing applications

- Network performance and reliability in eHealth and digital health applications
- Formal verification methods for ensuring QoS and reliability
- Performance evaluation of network slicing and resource allocation in 5G/6G environments
- Integration and service provisioning for IoT and cyber-physical systems
- Metrics and models for QoE and QoS in multimedia and real-time applications
- Reliability and performance assessment in multimedia streaming (including VoLTE, VoNR, IPTV, etc.)
- QoS and performance evaluation and assurance of UAV-assisted wireless networks
- QoS provisioning in massive machine-type communications (mMTC) and IoT networks
- Quality and performance evaluation in grid, distributed, and cloud computing environments
- Performance of Ultra-Reliable Low-Latency Communications (URLLC) and dependable communication systems
- Performance evaluation of smart grid communications and Internet of Vehicles (IoV)
- MEC, fog computing, and SDN/NFV management in edge computing
- Security, reliability, privacy, and trust considerations in network design
- Digital twin applications for Communications QoS, Reliability, & Modeling
- Generative AI for Communication QoS, Reliability & Modeling
- Standardization efforts related to QoS, reliability, and network resilience

Biographies of the Co-Chairs

Ayman Radwan is a professor at the department of Electrical and Computer Engineering (DEEC) at Instituto Superior Técnico (IST), Universidade de Lisboa, Lisboa, Portugal. He is also a researcher at Instituto de Telecomunicações, and acts as a Coordinator and Technical Manager of multiple EU projects. He received his Ph.D. from Queen's University (Canada), and his Master of Applied Science (M. A. Sc.) from Carleton University (Canada). His research interests include network architectures (specifically beyond 5G and future generations), fog-cloud networking, IoT, and eHealth. He has more than 200 published peer-reviewed articles. Dr. Radwan is an IEEE Senior member. He is currently acting as the Vice Chair of the IEEE eHealth Technical Committee.

Kenji Kanai is an assistant professor in the School of Engineering at The University of Tokyo, Japan. He received the B.E., M.E., and Ph.D. degrees from Waseda University, Tokyo, Japan, in 2010, 2012, and 2015, respectively. He was an assistant professor at Waseda University until 2017 and a researcher at Waseda Research Institute for Science and Engineering until 2023. His research interests lie in Network Softwarization, Virtualization, and Orchestration. He has served as a TPC member of IEEE ICC and Globecom since 2023.

Javier Berrocal is a professor at the University of Extremadura, Spain. He received the Ph.D. degree from the University of Extremadura in 2014. He acts as coordinator of several regional, national and EU research projects. His research interests include mobile computing, cloud continuum, IoT, eHealth, Industry 5.0. Javier has more than 200 published peer-reviewed papers. Finally, He is the director of IEEE ComSoc for the EMEA region.

How to Submit a Paper

All papers for technical symposia should be submitted via EDAS. Full instructions on how to submit papers and important deadlines are posted at https://icc2025.ieee-icc.org/

The authors of selected papers from this symposium will be invited to submit an extended version of their work for fast-track review and possible publication in the IEEE Open Journal of the Communications Society.