QualITA 2025: The Fourth Conference on System and Service Quality, June 25 and 27, 2025, Catania, Italy

Preface

The Italian Conference on System and Service Quality (QualITA) is the annual event of the CINI System and Service Quality Working Group. Its main goal is to put together Italian researchers, practitioners, and professionals from academia, industry, and public administration interested in qualities of computing systems such as performance, dependability, trustworthiness, efficiency, resilience, sustainability, and others. The conference is structured into different research tracks, selected keynote speeches, and some panels on related topics.

QualITA aims to highlight quality aspects, considering the complex, heterogeneous, multidisciplinary environment in which modern computing systems operate, together with their application domains, characterized by an increasing demand for resilient and sustainable solutions that should also meet efficiency as well as time-constrained requirements.

Technologies such as Cloud computing, IoT, 5G networks, Big Data, and AI have started becoming mature enough, turning the peak of inflated expectations and disillusionment towards effective solutions into enlightenment. To move further towards the plateau of productivity, the focus switches from functional to non-functional aspects, from mechanisms to qualities and policies for their enforcement, and from a proof of concept or prototype to a product or service. Therefore, techniques and tools to deal with quality aspects in the design, implementation, and assessment of computing systems become essential to support such a process. QualITA explores methodological and practical aspects of qualities, ranging from modelling and design techniques to evaluation tools and case studies. It also investigates related domains such as cloud, edge, IoT, intelligent systems, cyber-physical systems, high-performance computing, blockchain, and similar.

The fourth conference edition (QualITA 2025) program covered essential thematic areas, including metrics, tools and frameworks, artificial intelligence and machine learning, quantum computing, cloud and edge computing, and performance modeling and dependability.

Out of the 23 total participants at the conference, 11 contributions were accepted for the post-proceedings, with two of these contributions coming from invited speakers:

- Talanov (invited speaker) presents “The next generation of SNNs, energy effectiveness and memory optimisation"
- Santella et al. (invited speakers) present “Italian Communication Regulatory Authority (AGCOM): Quality of networks and video streaming services"
- Olana et al. present “Addressing QoS in Kubernetes Pods Autoscaling"
- Compagnucci et al. present “Towards AI Agent for Selecting Architectural Patterns in Federated Learning Systems"
- Illesova et al. present “QMetric: Benchmarking Quantum Neural Networks Across Circuits, Features, and Training Dimensions"
- De Santis et al. present “Towards Trustworthy AI in Critical Systems: From Evaluation Criteria to Metric-Based Risk Assessment"
- Iacono et al. present “On the analysis of quality for data lifecycle models"
- Capra et al. present “Using Rewriting Systems for Performance Analysis"

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- Barbierato et al. present “Quantifying Cybersecurity–QoS Trade-Offs in Smart Hospitals: A Comparative Study Using CSPNs and Markovian Agent Models"
- Gribaudo et al. present “Teaching scheduling and routing algorithms through animations with the JMCH component of JMT"
- Ziiatdinov et al. present “Quantity, Quality, and Quantum Perspectives in Data-Driven Cybersecurity"
- Capra et al. present “Symbolic structural techniques improving the analysis of Stochastic Symmetric Nets"
- Triolo et al. present “Real-Time QoE Assessment of Video Streaming based on ITU-T P.1203"

These accepted contributions collectively underscore the multifaceted nature of software quality and its broad applicability across diverse domains.

The Organizers

- Carmine Colarusso - University of Sannio, Italy
- Ida Falco - University of Sannio, Italy
- Grazyna Suchacka - Opole University, Poland
- Manuel Mazzara - Institute of Software Dev. and Eng., Innopolis, Russia
- Max Talanov - Institute for Artificial Intelligence R&D of Serbia, Serbia
- Maurizio Giacobbe - University of Messina, Italy
- Michele Mastroianni - University of Foggia, Italy
- Muhammad Ahmad - King Fahd University of Petroleum and Minerals, Saudi Arabia

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