



# 2022 IEEE International Conference on Quantum Software (QSW)

<https://conferences.computer.org/qsw/2022/>  
JULY 10-16

HYBRID FROMAT - ONLINE AND IN PERSON  
HOSTED AT UPC TERRASSA CAMPUS  
BARCELONA, SPAIN

## CALL FOR PAPERS



## IEEE International Conference on Quantum Software (QSW)

The IEEE International Conference on Quantum Software (QSW) is focusing on quantum software engineering, including hybrid quantum software, quantum software development, quantum in the cloud, quantum applications, and quantum software analysis & evolution. The goal of QSW is to bring together researchers and practitioners from different areas of quantum computing and (classical) software and service engineering to strengthen the quantum software community and discuss, e.g., architectural styles, languages, and best practices of quantum software as well as many other aspects of the quantum software development lifecycle.

All topics relevant to Quantum Software are of interest. QSW 2022 will organize refereed paper reviews in 5 research areas. Topics of interest include, but are not limited to, the following:

### Hybrid Quantum Software

- Architectural Styles of Hybrid Quantum-Classical Applications
- Architecture Blueprints for Hybrid Quantum-Classical Applications
- Best Practices and Patterns for Hybrid Quantum-Classical Applications
- Integration and Orchestration of Quantum/Classical Components in Hybrid Applications
- Specification & Verification of Functional/Non-functional Requirements of Hybrid Applications

### Quantum Software Applications

- Migration from Proof-of-Concept Quantum Applications to Production
- Scalability of Quantum Applications (e.g., sensitivity of increasing qubits, gate fidelity,...)
- Migration between different Quantum Technologies
- Software-perspective Experience Reports of Applying Quantum Technologies
- Best Practices and Patterns for Quantum Applications

### Quantum Software Analysis and Evolution

- Quantum Software Analysis and Mining
- KPIs and Quality Metrics for Quantum Applications
- Evolution and Re-engineering of Quantum Applications
- Quantum Software Visualization and Comprehension
- Quantum Software Maintenance, Repair, and Improvement

### Quantum Software Development

- Development Process for Quantum Applications
- Lifecycle Models for Quantum Applications
- Data Preparation and Error Mitigation Techniques
- Testing of Quantum Applications
- Quantum Software Languages, Code Generators, Compilers, and Simulators

### Quantum in the Cloud

- Quantum Computing as a Service
- Interoperability and Portability of Quantum Software
- Deployment Automation of Quantum Software
- Cloud-based Quantum Software Development Environments
- Quantum Software Performance and Benchmarking

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### PAPER SUBMISSION INSTRUCTIONS

Instructions for authors, including the submission link, are available at:

<https://conferences.computer.org/qsw/2022/cfp/>.

### IMPORTANT DATES

Submissions due:

**April 1, 2022**

Final notification to authors:

**May 15, 2022**

Camera-ready manuscript and registration due:

**June 1, 2022**

### CONTACT ICWS ORGANIZERS

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