

Call for Papers

Authors can submit short (4 pages) and regular (max 6 pages) papers that contain original material which is not currently communicated in other conferences or journals and has not been previously published. Potential research topics include (but are not limited to) following thrust areas.

Track 1: Quantum Foundations, Algorithms and Information Science

- Fundamentals and principles of quantum computing
- Quantum mechanics for computation
- Quantum bits, gates, circuits and measurements
- Quantum information theory
- Quantum algorithm design and analysis
- Quantum search algorithms
- Quantum Fourier transform and phase estimation
- Variational quantum algorithms
- Quantum optimization algorithms
- Quantum annealing and adiabatic quantum computing
- Quantum complexity theory
- Quantum simulation
- Quantum resource estimation
- Quantum error correction
- Quantum error mitigation
- Noise modelling in quantum systems
- Fault-tolerant quantum computing
- Quantum advantage, utility and benchmarking

Track 2: Quantum Systems, Software, Communication and Security

- Quantum processors and qubit technologies
- Superconducting, trapped-ion, photonic and neutral-atom systems
- Quantum computer architectures
- Quantum control and measurement systems
- Quantum circuit design and optimization
- Quantum programming languages

- Quantum software engineering
- Quantum compilers and transpilers
- Quantum operating systems
- Quantum development platforms, simulators and tools
- Quantum cloud computing
- Hybrid quantum–classical computing
- Integration of quantum computing with high-performance computing
- Distributed quantum computing
- Quantum communication
- Quantum networking and the quantum internet
- Quantum teleportation
- Quantum key distribution
- Quantum cryptography
- Post-quantum cryptography
- Quantum system verification, testing and benchmarking
- Hardware–software co-design

Track 3: Quantum Intelligence, Applications and Emerging Technologies

- Quantum machine learning
- Quantum neural networks
- Quantum-enhanced artificial intelligence
- Quantum generative models
- Quantum data encoding and feature extraction
- Quantum natural language processing
- Quantum image processing
- Quantum signal and audio processing
- Quantum computer vision
- Hybrid quantum–classical learning models
- Quantum optimization and decision-making
- Quantum applications in healthcare and medical diagnosis

- Quantum drug discovery and computational chemistry
- Quantum applications in finance and risk analysis
- Quantum applications in logistics and supply chains
- Quantum applications in agriculture and environmental monitoring
- Quantum applications in energy and smart-grid management
- Quantum applications in remote sensing
- Quantum education and curriculum development
- Quantum workforce development
- Quantum entrepreneurship and innovation
- Ethical, legal and societal aspects of quantum technologies

Track 4: Emerging Trends in Computing and Interdisciplinary Applications

- Artificial intelligence and machine learning
- Data science and big-data analytics
- Digital image processing and computer vision
- Natural language processing
- Cybersecurity and digital forensics
- Cloud, edge and distributed computing
- Internet of Things and smart systems
- Blockchain technologies
- Software engineering and intelligent applications
- Robotics and automation
- Healthcare, agriculture, education and industrial applications
- Other emerging and interdisciplinary computing research