

**Title:**

Quantum Computation

Abstract:

In recent decades, quantum computation is an interdisciplinary between computer science and the quantum mechanics, and inspires some other fields, such as quantum machine learning, quantum artificial intelligence (AI) and their applications of quantum system computing, quantum finance and quantum biomedicine, et.al. In this circumstance, the quantum era is coming. Meanwhile, the related study and applications of quantum computation have become very important and more noticeable. This workshop aims to bring together researchers from different paradigms solving quantum computation and further application problems under a unified platform for sharing their work and exchanging ideas.

Scope and Topics:

The objective of this workshop is to invite authors to submit original manuscripts that demonstrate and explore current advanced world in all aspects of quantum computation. The workshop solicits novel papers on a broad range of topics, potential topics include but are not limited to:

- ✧ Quantum machine learning
- ✧ Quantum computing of materials
- ✧ Quantum artificial intelligence (AI)
- ✧ Quantum finance and biomedicine
- ✧ Quantum computing applications in chemical engineering
- ✧ Quantum algorithms and parameterized quantum circuits
- ✧ Quantum computation under the noise
- ✧ The Quantum Approximate Optimization Algorithm (QAOA) and application
- ✧ Barren Plateaus in quantum computing
- ✧ The basic theory of quantum computation

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Xiaoyu Li is an associate professor of University of Electronic Science and Technology of China (UESTC) and secretary general of software branch of Sichuan computer society. She was awarded a PhD degree at School of Computer Science and Engineering from UESTC in 2014 (From 2011 to 2013, she was a joint training of doctoral students at University of California Los Angeles). She joined the School of Information and Software Engineering of UESTC in 2014, and her research interests include quantum machine learning, quantum information, Quantum artificial intelligence (AI), big data analysis and mining based on quantum computing, quantum finance and biomedicine, etc. By now, she has published more than 60 top-level papers, 6 international patents. And she has been the expert of ISO/IEC Quantum Computation Standard and Digital Twin Standard.

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Qinsheng Zhu is an associate professor in School of Physics at University of Electronic Science and Technology of China (UESTC). He received the Ph.D. degree in atomic and molecular physics from Sichuan University, China in 2008. He was a visiting scholar in Center of Advanced Science and Engineering for Carbon (Case4Carbon) at Case Western Reserve University from Oct. 2014 to Oct. 2015. His research interests include quantum machine learning, quantum information, Quantum artificial intelligence (AI), Quantum finance and Quantum open system. etc. By now, he has published more than 20 top-level papers.

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Zhiguo Qu, received the Ph.D. degree in information security from Beijing University of Posts and Telecommunications, China, in 2011. From 2012 to 2014, he worked as a Post-doc Researcher Fellow at Dublin City University in Ireland. In July 2011, he joined Nanjing University of Information and Technology in China, where he is currently a Lecturer in the College of Computer and Software. His research interests include quantum secure communication, quantum information hiding, data mining and digital watermarking. By now, he has published more than 30 top-level papers.

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Hao Wu is an Associate Professor in the School of Physics at UESTC. He received a Ph.D. degree of theoretical physics from the University of Science and Technology of China (USTC) in 2008. His research interests include Quantum Computation, Quantum Machine Learning, Quantum Finance, etc. By now, he has published more than 20 papers on the main international conference and journals.

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Weizhong Qian was born in Sichuan Province, China, in 1976. He received the M.S. degree in computer application and technology and Ph.D. degree in computer software and theory from University of Electronic Science and Technology of China (UESTC) in 2002 and 2011 respectively. He is currently an associate professor at the school of information and software engineering of UESTC. His main research interest is in big data analysis and information security.

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