



Fall 2016 Colloquium
Center for Networked Computing
Department of Computer and Information Sciences

Shaping the Future of Commercial Quantum Computer

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Abstract: The slow progress on universal quantum devices limits the further developments of universal quantum computers. Attacking the 1024 bit RSA by Shor algorithm is impractical currently, and the modern cryptography still has strong security. With the quantum device constraints under consideration for the first time, the storage of former registers in the Shor algorithm should be 100 or less qubits theoretically decreased from 1000 or more qubits. Quantum artificial intelligence, as the rapid progress of special quantum computer, is regarded as the new generation computing idea and meets the goal of NSCI. With the wide applications in the field of machine learning and artificial intelligence, importance to the influences of quantum artificial intelligence on the big data on internet should be attached. Identifying killer-apps for quantum computing is challenging, additionally, it was the first time to use the quantum computer for designing cryptography and it shed an interesting light on cryptography design based on the quantum artificial intelligence which had not been reported anywhere before.

Bio: Chao Wang received the B.S. degree and Master Degree in XiDian University, China, in 1992 and 1995, and the Ph.D from Tongji University in 1999. Currently, he is currently a Professor in the Department of Communication Engineering, Shanghai University,. He is IEEE Senior Member, Information Security Committee Vice Chair of China Electronics Institute, Committeeman of the Sixth Shanghai Expert Committee for Informatization, Directorate of China Artificial Intelligence Institute, Committeeman of CCF, IEEE Shanghai Section Secretary, and IEEE Shanghai Computer Chapter Vice Chair. His research interests include wireless sensor network, network information security, and ECC quantum computing cryptography.