DISCoVER NSF Expedition Seminar Series

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12:00 PM - 1:00 PM PST (3:00 PM - 4:00 PM EST)
via Zoom:
https://rochester.zoom.us/j/5852751551?pwd=S1JyNjZkOWVZOFJaGJ4cIlfNVNoQT09
Room #585 275 1551, passcode: Romek

Introduction to Quantum Computing:
Qubits, Gates, and Algorithms

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Quantum computers are fundamentally different from conventional computers. They promise to address problems that are practically prohibitive and even impossible to solve using today’s supercomputers. The challenge is building one that is large enough to be useful. In this talk, we will introduce quantum computing from an engineer’s perspective, with a focus on the qubit modalities, single-qubit and two-qubit gates, and their use in quantum algorithms and error mitigation.

Dr. William D. Oliver is appointed Henry Ellis Warren (1894) Professor of Electrical Engineering and Computer Science and Professor of Physics at the Massachusetts Institute of Technology. He serves as the inaugural Director of the MIT Center for Quantum Engineering and as Associate Director of the MIT Research Laboratory of Electronics. Will’s research interests and expertise include the materials, fabrication, design, and implementation of superconducting qubit processors, as well as the development of cryogenic packaging and control electronics for extensible quantum computing applications.

Will is a Fellow of the American Physical Society, Senior Member of the IEEE, serves on the National Quantum Initiative Advisory Committee and the US Committee for Superconducting Electronics, and was a coauthor of the 2019 National Academies consensus study report entitled, “Quantum Computing: Progress and Prospects”. He received his B.S. in EE and B.A. in Japanese from the University of Rochester in 1995, S.M in EECS from MIT in 1997, and Ph.D. in Electrical Engineering from the Stanford University in 2003.

Organizer: Roman Sobolewski, roman.sobolewski@rochester.edu.