



The Race for Quantum Computing

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Quantum computers are poised to revolutionize all areas of science and technology. In this talk I will give a basic overview of the field, its science, and its applications. I will begin by describing the history of quantum computing, its foundation in quantum physics, and different approaches. I then focus on three primary applications: encryption & security, machine learning, and chemistry. Post-quantum algorithms will soon be necessary, as quantum computers are no more than 10 years away from hacking most online encryption systems. Quantum machine learning is based on amplitudes rather than probabilities, providing more sophisticated decision-making. And quantum chemistry has the potential to produce personalized medicine for individuals based on their genetic makeup.

Wednesday

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4:00 P.M.

Rm 118 NSH