Computer Science Colloquium

Abstracting Quantum Computing

Dr. Si Hui Tan

Quantum Horizon

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Abstract

Quantum computers have the potential to drastically outperform conventional computers for a variety of tasks, from simulating molecular interactions to machine learning. However, our understanding of how to construct non-trivial quantum algorithms is still in its infancy, and human intuition is not well-suited to finding ways to accomplish computational tasks through quantum interference. As a result, reaching a future where quantum computing is widely used requires not only overcoming the challenges of building scalable quantum computers, but also finding new ways to program these systems to tackle new and more complex problems.

About the Speaker

Si-Hui has broad experience in quantum information science, having been an active researcher in the field for over 18 years. She joined Horizon Quantum Computing, shortly after its inception, to pursue the ambition of making quantum computers a reality for everyone. At Horizon, she heads the research development and helps to oversee daily operations. Si-Hui received a BSc in Physics from Caltech and a PhD in Physics from MIT. Prior to joining Horizon, she has worked at A*STAR's Data Storage Institute, and subsequently at Singapore University of Technology and Design and the Centre for Quantum Technologies. She was named to the SG100 Women in Tech 2021 list and is a member of the College Advisory Board of the College of Science at Nanyang Technological University.