

# **A Mathematical Introduction to Quantum Computing**

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## **Abstract**

The recent development of quantum algorithm has drawn great attentions among physicists, computer scientists and mathematicians. The goal of this talk is to give an introduction of the subject in a mathematical form so that students and mathematicians of all fields can easily understand and enter its research area. Shor's algorithm, Grover's algorithm and examples of quantum random walks will be used to illustrate the basic ideas.