Google AI Quantum

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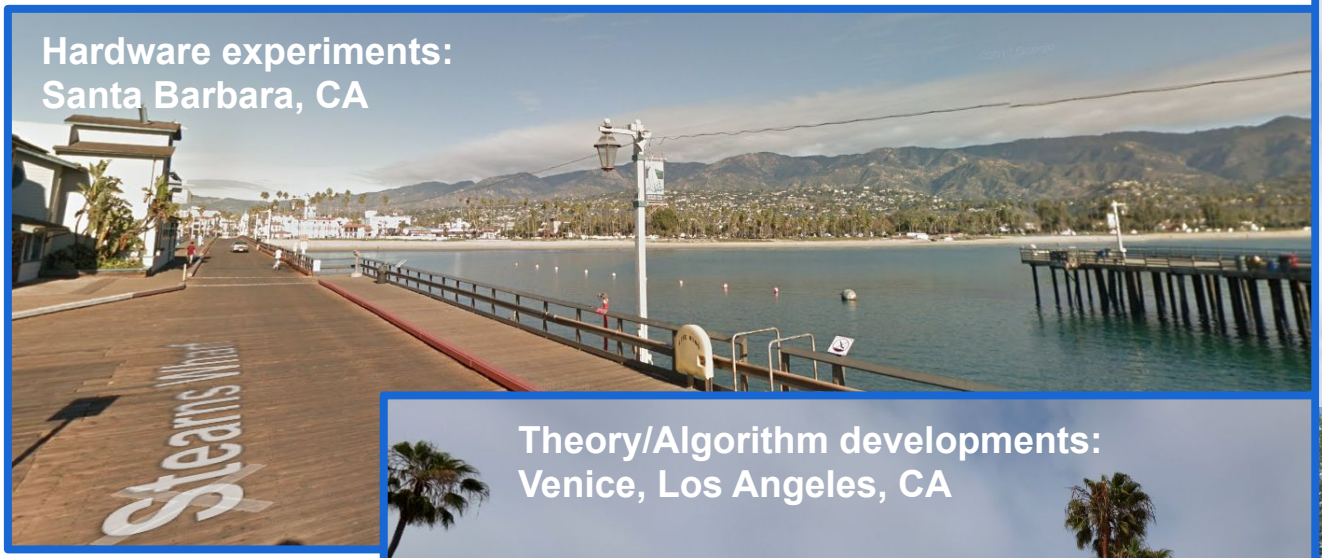
Quantum computing at Google

- We want to develop **quantum hardware** - programmable devices which behave according to a simple quantum model

- We want to develop **quantum algorithms** to leverage this hardware to solve certain computational problems

Quantum computing at Google



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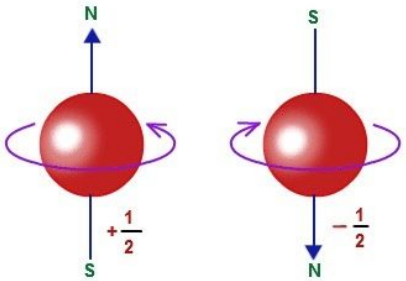
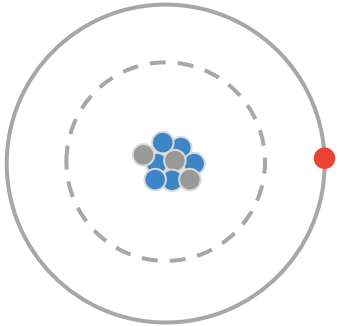
Quantum computing at Google

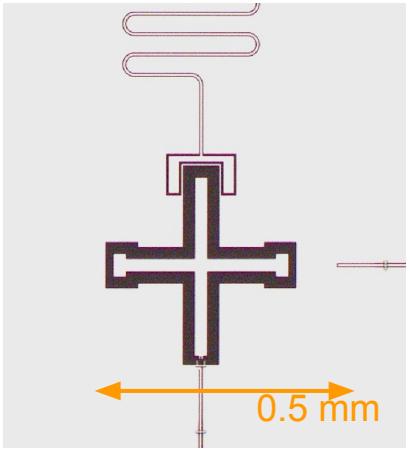
Electrons



Atoms



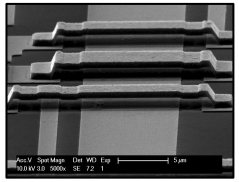
“Artificial Atom”

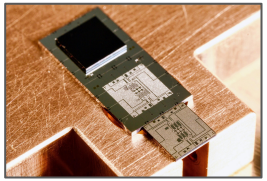


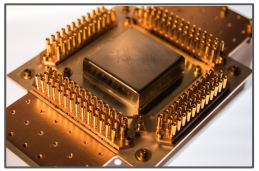
Superconducting electrical circuit

Quantum computing is interdisciplinary

Fabrication



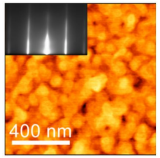


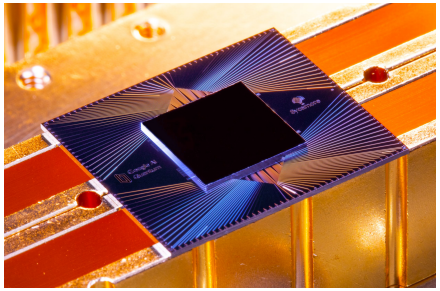


Mechanical engineering

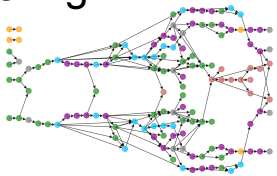
Quantum processor

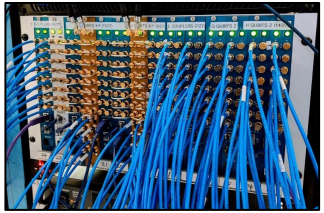
Material science





Software engineering and physics





Electrical engineering

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My background

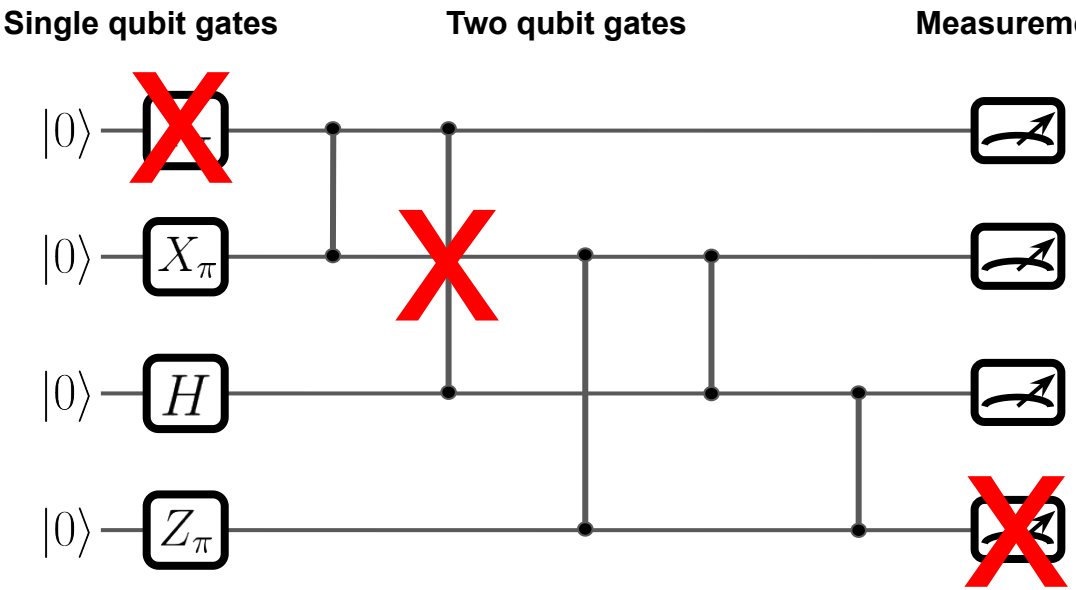
B.S. in Physics, University of Minnesota
2008 - 2012

Research experience: magnetic materials, force microscopy

Ph.D. in Physics, UC Santa Barbara
2012-2018

Research experience: Superconducting qubits, including fabrication, cryogenics and measurement

My current research



Figuring out how quantum logic gates go wrong - and how to fix them

Day to day:

- Thinking of experiments
- A *lot* of programming to realize those experiments
- Data analysis, interpretation, and communication

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