Applications of Quantum Computation

CSE 490Q: Quantum Computation
Quantum Cryptography

• Classical cryptography depends on the assumption that certain key problems (e.g., factoring) are hard
  • these assumptions are not true for BQP

• Quantum computation makes that obsolete
• But it gives us a replacement that is provably secure
Vaccine Development
Climate Change

cars

meat

electricity

industrial processes
Resources

- Article on using quantum computers for vaccine development
- Article on using quantum computers for combating climate change
- Textbook discusses quantum cryptography protocols