

Quantum computing for computational optimization and engineering applications

*Dr. Fengqi You, Roxanne E. and Michael J. Zak Professor
Process-Energy-Environmental Systems Engineering
fengq.you@cornell.edu | you.cbe.cornell.edu*

Quantum computation could potentially offer significant advantages over classical computation for various science and engineering applications. This project aims to study the application of quantum computers to computational problems in science and engineering.

The M.Eng. student(s) will develop quantum computing frameworks for solving large-scale optimization problems for science, engineering and energy applications, by leveraging IBM's (our industrial partner's) quantum processors and facilities. Specifically, the student(s) will learn to use Qiskit toolkit (by IBM) to develop quantum computing frameworks for solving large-scale combinatorial optimization problems in various application domains, and evaluate their performance over classical computation.

No prior knowledge on quantum computing is required.