# Daniyaal Farooqi

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### **OBJECTIVE**

• To find a rigorous applied research internship in creating novel quantum algorithms, contributing to the use cases of quantum computers before the hardware catches up.

#### **EDUCATION**

### **MSc in Applied Computing**

September 2025 – December 2026

University of Toronto, Department of Computer Science

Courses: CSC2332 (Quantum Algorithms), PHY2203 & PHY2204 (Quantum Optics I & II), CSC2615 (Ethical Aspects of AI)

### **Honours Bachelor's of Science**

September 2021 - April 2025

University of Toronto, Faculty of Arts and Science

Computer Science Major, Physics Major, Mathematics Minor

Courses: PHY365 (Quantum Information), PHY356 & PHY456 (Quantum Mechanics I & II), CSC373 (Algorithm Design)

#### RESEARCH EXPERIENCE

### University of Toronto, The Matter Lab

**Enhanced Randomized Quantum Simulation Techniques** 

August 2024 – Present

 Improving algorithms for Hamiltonian simulation with a focus on electronic structure Hamiltonians. Performing numerical simulations in Python using OpenFermion to compare our approaches' error bounds to existing ones. 190,000+ lines of code created or edited.

## **University of Toronto, Computer Science Department**

Systematic Literature Review of Academic Procrastination in STEM

May 2024 - Present

Major writing role on a 6-page systematic literature review of academic procrastination in STEM post-secondary students.
Wrote Python scripts for filtering through thousands of papers from academic databases such as ACM and Web of Science.
Updating the review to consider papers written in 2025 and narrowing the scope to interventions for computer science students with the goal of submitting to ITiCSE 2026.

#### **WORK EXPERIENCE**

### **University of Toronto**

CSC110 Teaching Assistant

Sept 2025 – December 2025

• Teaching assistant for a first-year introductory computer science course covering Python and proofs of runtime and correctness. Holding a 2-hour weekly tutorial, invigilating quizzes, holding office hours to answer questions regarding course assessments, and holding interviews to assess student understanding of course material.

### Laurentian Bank of Canada, LBC Tech

Intern in Enterprise Portfolio Management

May 2022 - August 2022

 Full-time intern on a large-scale payments project. Directly assisted the project manager in transitioning the project to an Agile methodology. Moved project resources onto Jira and Confluence. Met with project manager daily and each project member weekly. Created slides for presentations delivered to upper management.

### **TECHNICAL SKILLS**

- Quantum Simulation: OpenFermion, Qmod, Qiskit
- Data Analysis: MatPlotLib, SciPy, NumPy
- Software Design: Python, Java, Godot Game Engine

#### **AWARDS**

# Runner-Up Winner in Open Challenge, Q-SITE Quantum Computing Hackathon, 2024.

• Implemented an algorithm for solving differential equations on the Classiq quantum computing platform in a team, and wrote a LaTex-typed final report. Won a \$600 cash prize.