# James Saslow

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## Skills

- Python | Qiskit | IBMQ | DWave Leap API | Flask | TensorFlow | PyTorch | C++ | OOP | Wolfram Language | Mathematica
- Quantum Programming | Quantum Algorithms | Quantum Software Development | Combinatorial Optimization | QUBO
- Superconducting Quantum Computing | Benchmarking | English, Spanish - *All Professional Proficiency or Above*

## Work Experience

**Quantum Engineering Traineeship** — **NSF** — Golden, CO — 1/2024 - Present

- Engaged in an NSF-funded quantum traineeship program between San Jose State University and the Colorado School of Mines to prepare fellows to join the quantum workforce
- Studied and contributed to quantum information science research at Colorado School of Mines during the Spring 2024 semester

**Teaching Associate** — **San Jose State University** — San Jose, CA — 8/2023 - 12/2023

- Instructed an undergraduate-level introductory physics lab course (Phys 2A), graded problem sets, and fostered collaborative, team-based student learning

**Quantum Foundations Researcher** — **San Jose State University** — San Jose, CA — 12/2021 - 12/2023

- Performed simulations of spontaneous parametric down-conversion in Python to research entangled photon pairs
- Implemented Runga-Kutta 4th-order techniques to solve non-linear coupled differential equations

**Quantum Algorithms Intern** — **Air Force Research Lab** — Rome, NY — 6/2023 - 8/2023

- Researched amplitude amplification quantum algorithms for solving combinatorial optimization problems
- Performed benchmarking of amplitude amplification on IBMQ heavy-hexagonal superconducting quantum devices

**Grader** — **San Jose State University** — San Jose, CA — 1/2021 - 5/2021

- Grader for Mathematical Methods for Physics course (Phys 130), graded problem sets, and assisted students with homework in Zoom breakout rooms

**Soft Matter Research Intern** — **Brown University** — Providence, RI — 6/2020 - 8/2020

- Solved nonlinear differential equations to obtain the structure of a spherical colloidal membrane viral rod assembly
- Presented research to the Virtual Leadership Alliance National Symposium

## Education

**M.S., Quantum Technology** — **San Jose State University** — San Jose, CA — 8/2023 - Present

- **Coursework:** Quantum Computing | Advanced Machine Learning | Quantum Programming | Quantum Information Science
- **GPA:** 3.90
- Co-founder of the Society of Quantum Engineers at SJSU

**B.S., Physics** — **San Jose State University** — San Jose, CA — 8/2018 - 12/2022

- **Coursework:** Quantum Mechanics | Partial Differential Equations | Computational Physics
- **Upper Division Major GPA:** 4.0, Summa Cum Laude
- Accepted into the Society of Physics Students (SPS) in recognition of scholarly excellence

## Projects

- **Solving QUBOs on DWave's API**
  - A tutorial series solving NP-Hard combinatorial optimization problems using DWave's quantum annealers
- **Variational Quantum Eigensolver Tutorial**
  - A Jupyter Notebook tutorial on performing VQE for an H2 molecule
- **Transmon Qubit Emulator**
  - Interactive simulator and Bloch Sphere visualization of the time evolution of a Transmon qubit interacting with microwave pulses
- **Grover's Algorithm with an Imprecise Oracle**
  - A quantum error correction model of Grover's algorithm to recover solutions of the marked state while still maintaining a quantum advantage