James Saslow

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Education

San Jose State University — **Expected Graduation Date: May 2025**
Masters of Science in Quantum Technology

- Estimated GPA: 4.0
- Coursework: Quantum Information Science, Intro to Quantum Computing
- Awards: Quantum Technology NSF Research Traineeship at Colorado School of Mines
- Co-founder of the Society of Quantum Engineers chapter at SJSU

San Jose State University — **August 2018 - December 2022**
Bachelor of Science in Physics

- Upper Division Major GPA: 4.0
- Coursework: Quantum Mechanics, Computational Physics, Partial Differential Equations
- Awards: Summa Cum Laude, Recruited into the Society of Physics Students

Work Experience

San Jose State University Physics Department — **August 2023 – Dec 2023**
Teaching Associate (Part-time)

- Instructed a university-level introductory physics lab section, graded problem sets, and fostered collaborative, team-based learning for students.

Griffiss Institute & AFRL Internship Program — **June 2023 – Aug 2023**
Quantum Algorithms Research Intern at Air Force Research Lab

- Developed quantum algorithms in Qiskit simulators aimed at solving QUBO problems via amplitude amplification schemes
- Performed benchmarking on IBMQ by conducting a fidelity analysis of amplitude amplification on heavy-hexagonal superconducting devices

San Jose State University Physics Department — **December 2021 – Present**
Quantum Foundations Researcher

- Performed simulations of spontaneous parametric down-conversion and entangled photon generation via an action-based analysis
- Engaged in Python programming, Runga-Kutta techniques for solving nonlinear differential equations, and data visualization

The Leadership Alliance, Brown University — **June 2020 – August 2020**
Soft Matter Research Intern

- Solved nonlinear differential equations to obtain the structure and function of a spherical colloidal membrane viral rod assembly
- Presented research to the Virtual Leadership Alliance Virtual Symposium
- Awarded the Leadership Alliance Professional Development Badge in recognition of James' research

Relevant Projects

Solving QUBOs on DWave's Hybrid Solver — **December 2023 – Present**

- A tutorial series in Jupyter Notebook explaining the process of mapping and solving QUBOs on DWave's Quantum annealers

Quantum Circuit Simulator — **September 2023 – Present**

- Programmed a gate-based quantum circuit simulator in Python using matrix methods only
- Utilized professional coding conventions and developed data visualization functions to display probabilities, Bloch Sphere visualization, and amplitude space representations of discrete wavefunctions.

Variational Quantum Eigensolver Tutorial — **October 2023 - November 2023**

- Wrote a Python tutorial in a Jupyter Notebook explaining the implementation of the Variational Quantum Eigensolver, solving for the ground state of an H2 molecule.

Technical Skills

- **Software:** Python, Mathematica, Qiskit, IBMQ, DWave API & Ocean SDK, numerically solving partial differential equations
- **Language:** English (Native), Spanish (Professional Working Proficiency)