

James Saslow

Curriculum Vitae

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Skills

- Python | Qiskit | TensorFlow | C++ | Linux | OOP | Machine Learning | Mathematica | IBMQ | DWave Leap API
- Qiskit Metal | Ansys | HFSS | RF/Microwave Engineering | Quantum Algorithms | Combinatorial Optimization
- Superconducting Quantum Computing | Qubit Benchmarking | English, Spanish - *All Professional Proficiency or Above*

Education

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

- **Coursework:** Quantum Computing/Programming | Advanced Machine Learning | Quantum Many-Body Physics
- **GPA:** 3.90
- Co-founder of the [Society of Quantum Engineers at SJSU](#)
- Davidson Student Scholar Engineering Award Recipient

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

Work Experience

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

- Engaged in an NSF-funded [quantum traineeship program](#) to prepare to join the quantum workforce
- Attended the Colorado School of Mines for an exchange semester to study quantum engineering and machine learning
- Collaborated with LLNL to design a superconducting chip and performed simulations in HFSS, q3d, and Maxwell 3D Ansys environments to research the iSWAP entanglement gate and other single qubit gates in quantum hardware

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

- Instructed an undergraduate-level introductory physics 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 - Leadership Alliance** 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](#)

Projects

[Solving Binary Classification Problems Using Quantum Neural Networks](#)

- Prototyped a quantum neural network to perform binary classification on the Iris, Breast Cancer Wisconsin, and on a filtered MNIST dataset

[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 corrected model of Grover's algorithm to recover solutions of the marked state while still maintaining a quantum advantage

Presentations

- Saslow, J. [*"My Experience in NRT-QL: A Program for Training a Quantum Workforce."*](#) [2024 Quantum NRT Satellite Meeting](#), Crystal City, Washington DC, Oct 2024
- Saslow, J. [*"Superconducting Quantum Chip Design & Optimization."*](#) NSF Research Traineeship Annual Meeting 2024, Arlington, VA, Oct 2024
- Saslow, J. [*"Superconducting Chip Design and Simulation."*](#) San Jose State University, Society of Quantum Engineers Seminar, San Jose, CA, Sept 2024
- Saslow, J., Koch, D., [*"Solving Combinatorial Optimization Problems using a Quantum Computer."*](#) San Jose State University Department of Physics and Astronomy Seminar, San Jose, CA, Oct 2023
- Saslow, J., Koch, D., [*"Solving Cost Function Problems on IBMQ Devices."*](#) Griffiss Institute Poster Symposium, Rome, NY, July 2023
- Saslow, J., Wharton, K., [*"Apparent Photons from a Classical Action Constraint."*](#) SJSU Student Research Showcase, San Jose State University Department of Physics and Astronomy Seminar, San Jose, CA, Sept 2022
- Saslow, J., Stork, B., Wharton K., [*"Apparent Photons from a Classical Action Constraint."*](#) [17th Annual SJSU College of Science Student Research Day](#), San Jose, CA, May 2022
- Saslow, J., Powers, T., [*"The Role of Tilt in Colloidal Membranes."*](#) Virtual Leadership Alliance National Symposium, Providence, RI, July 2020

Outreach & Professional Associations

- The Society of Quantum Engineers (SQE) at SJSU
 - Co-Founder
 - Treasurer Fall 2024 - Spring 2025
- Institute of Electronics & Electrical Engineers (IEEE)
 - Graduate Student Member
- Society of Physics Students (SPS)
 - Member

Media Coverage

- Featured in SJSU's News Center ["A Quantum Leap into New Technology"](#)