ELIAS A. LEHMAN

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EDUCATION

University of California, Berkeley *May 2024*
Bachelors of Arts, Physics & Minor, Electrical Engineering and Computer Science

Relevant Coursework: Graduate Solid State Electronics, Microfabrication Lab, Integrated Circuit Devices, Digital System Design, Data Structures, Quantum Mechanics II, Quantum Information Science, Analytical Mechanics, Electromagnetism & Optics II, Thermodynamics.

RESEARCH EXPERIENCE

Devices Research Engineer, Advanced Quantum Testbed at LBNL *Aug. 2023 - Present*
· Relieving bandwidth limitations of traveling wave parametric amplifiers using reverse Kerr non-linearity.
· Simulated device to achieve exponential amplification by satisfying the resonant phase matching condition.

Visiting Researcher, University of Waterloo IQC *May 2023 - Aug. 2023*
· Optimized parametric coupling between superconducting qutrits under supervision of Dr. Adrian Lupascu.
· Synthesized GDS layouts and test plans for experimental quantum devices with commercial EDA tools.
· Estimated qutrit relaxation and dephasing times with special treatment of flux bias interaction.

Machine Learning Intern, SLAC National Laboratory *May 2023 - Aug. 2023*
· Built model ensemble for regression on X-Ray data under supervision of Dr. Maria Dainotti.
· Extensive use of machine learning libraries and preprocessing methods to maximize predictability.
· Optimized hyperparameters of RF, SVM, and GAM with efficient genetic search algorithm.

Fabrication Assistant, UC Berkeley Department of Physics *Jan. 2023 - May 2023*
· Designed graphene-hBN transistor for invristigating 1T-TaSe2 under supervision of Dr. Michael Crommie.
· Mechanically exfoliated graphene, hBN and conducted polymer-assisted transfer to silicon substrate.

EXTRACURRICULAR

Co-President, Quantum Computing at Berkeley *Jan. 2022 - June 2023*
· Organized speaker events with over 450 registrations, QIS tutoring sessions for courses with 120 enrollments, increased student body by 38% to over 900, and raised several thousand dollars.

Teaching Assistant CS 198, UC Berkeley *Aug. 2021 - Jan. 2022*
· Taught Quantum Mechanics, Circuits, and Algorithms for students in Full Stack Quantum Computing.

Research Analyst, The Quantum Daily *Apr. 2022 - Apr. 2023*
· Led delivery of 30+ page white paper for executives in microfabrication, cryogenics, and cryptography.

SKILLS

Programming Languages: Python, R, C++, Java, Typescript
Software Tools: Ansys Q3D, Mathematica, RStudio, Git, Unix/Windows Terminal

AWARDS AND SCHOLARSHIPS

IBM Qiskit Advocate, IBM *Oct. 2023*
Undergraduate Research Award, University of Waterloo *May 2023*
Berkeley Physics-and-Astro Undergraduate Research Scholar, UC Berkeley *Apr. 2023*
Venture Capital Investment Competition (2nd Place), UC Berkeley *Feb. 2023*
Math & Physical Sciences Scholar, UC Berkeley *Nov. 2022*
IBM Certified Associate Developer, IBM *Oct. 2022*