

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, Digital Logic Design, Integrated Circuit Devices, ASIC Design Lab (Verilog), Microfabrication Lab, Microelectronic Circuits, Advanced Quantum Mechanics, Quantum Information Science, Electromagnetism & Optics, Thermodynamics, Analytical Mechanics.

RESEARCH EXPERIENCE

Devices Research Engineer, Advanced Quantum Testbed, LBNL

Aug. 2023 - Present

- Owned production of nanoscale devices through layout, verification, fabrication, and validation.
- Verified performance using formal methods (Python) and FEM electromagnetic field solver (HFSS).
- Relieved multi-qubit readout bandwidth limitations by producing a quantum-limited parametric amplifier.

Visiting Researcher, Institute for Quantum Computing, University of Waterloo

May 2023 - Aug. 2023

- Synthesized GDS layouts and test plans for experimental quantum devices.
- Identified inductive noise channels with mathematical treatment and field solver (Ansys Q3D).
- Optimized control system for parametric capacitive coupling of superconducting quantum devices.

Machine Learning Intern, SLAC National Laboratory

May 2023 - Aug. 2023

- Built model ensemble for inferring redshift of gamma-ray bursts using X-Ray data.
- Extensively used machine learning libraries and statistical methods to maximize prediction accuracy.
- Embedded model in open-source web app to help astrophysicists infer redshifts independently.

Fabrication Assistant, UC Berkeley Department of Physics

Jan. 2023 - May 2023

- Designed graphene-hBN transistor for investigating Mott insulation properties of 1T-TaSe₂.
- 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.

Research Analyst, The Quantum Daily

Apr. 2022 - Apr. 2023

- Delivered 30+ page white paper for executives in fabrication, cryogenics, and cryptography industries.

Teaching Assistant CS 198, UC Berkeley

Aug. 2021 - Jan. 2022

- Taught Quantum Mechanics, Circuits, and Algorithms for students in Full Stack Quantum Computing.

PROFESSIONAL SKILLS

Programming Languages: Python, Verilog, R, Java, C/C++, Typescript.

Software Tools: Mathematica, Cadence (Innovus, Virtuoso), Ansys Q3D, RStudio, Git, Terminal, VIM.

Hardware Tools: DMM, Oscilloscope, Function Generator, Wafer Probe, Commercial Microcontrollers.

AWARDS AND SCHOLARSHIPS

Undergraduate Research Award, University of Waterloo

May 2023

Berkeley Physics & 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