

# Albert Wang

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## EDUCATION

### Columbia University

*Bachelor of Science in Electrical Engineering*

GPA: 3.81/4.0; Dean's List 2024, 2025

New York, NY

Aug. 2024 – May 2026

### Bates College

*Bachelor of Arts in Physics, Minor in Philosophy*

GPA: 3.97/4.0; Dean's List 2021, 2022, 2023, 2024

Lewiston, ME

Aug. 2021 – May 2026

Relevant coursework: Analog Electronic Circuits, Digital VLSI, Solid-State Devices, Advanced Logic Design, Signals & Systems, Power Systems Analysis, Electromagnetics

## TECHNICAL SKILLS

**Circuits/Devices:** CMOS, small-signal, biasing, op-amp/filter basics

**EDA/HDL:** Cadence Virtuoso (schematic/layout), LTspice; Verilog, VHDL; PCB CAD (Fusion 360 Electronics)

**Test/Lab:** Oscilloscope, DMM, bench supplies, soldering

**Programming:** Python, C/C++, MATLAB, Java

**Languages:** English, Chinese

## EXPERIENCE AND PROJECTS

### Hardware Security Intern (PUF/HSM)

*eMemory Technology Inc.*

July 2025 – September 2025

*Hsinchu, Taiwan*

- Mapped Thales **LunaSH/LunaCM** and **PKCS#11** semantics into a **PUF**-backed HSM interface framework.
- Co-authored a **SH/CM API**: partitions/roles, NTLS/STC, HA/backup/cluster, audit/time, appliance ops.
- Aligned interfaces with **FIPS 140-3** expectations and common HSM workflows; identified compliance/test points.
- Supported **prior-art** and patent landscaping to differentiate design choices.

### Collegiate MEP Intern

*PBK Architects*

May 2025 – July 2025

*Houston, TX*

- Produced NEC-compliant panel schedules and circuiting (receptacles, lighting, power rooms) for K–12 schools.
- Learned and implemented **load calculations**, sized feeders/breakers, and balanced phases.
- Standardized **panel/circuit naming** to improve plan consistency and reviews.

### Rockets Electronics Team

*Columbia Space Initiative*

September 2024 – Present

*New York, NY*

- Focused on **PCB** design and integration to achieve higher altitude launches for high-powered hybrid rockets.
- Designed a circuit with a current-limiting safety module to power avionics systems using **Autodesk Fusion 360**.

## RESEARCH EXPERIENCE

### NSF-REU Computational Physics Researcher

*Clarkson University*

May 2024 – October 2024

*Potsdam, NY*

- Conducted research on projection-based learning for high-efficiency and accurate photonic crystal simulations.
- Developed **MATLAB** code for various **photonic** structures, achieving a speedup of two orders of magnitude.
- Fast simulations with high accuracy for photonic crystals and quantum nanostructures enabled by a projection-based learning methodology - 2nd author (<https://doi.org/10.1111/12.3028208>).

### Undergraduate Researcher in Neutrino Detection

*University of Massachusetts Amherst*

May 2023 – May 2024

*Amherst, MA*

- Advanced nEXO's neutrinoless double beta decay research by collaborating with UMass Amherst's team.
- Studied photon detection efficiency (PDE) of **SiPMs** in liquid xenon through experiments and simulations.
- Processed waveforms with **Python Libraries** and Geant4/Chroma, generating key plots for PDE calculations.
- Authored a 46-page report on LED performance across cryogenic temperatures and media in a kg-scale LXe setup.
- Presented findings orally at the **April American Physical Society (APS) 2024 conference**.