Elizabeth Polito

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Education

University of California, Berkeley *August 2025 - Present*
Ph.D. Electrical Engineering & Computer Science Berkeley, CA

Cornell University *August 2021 - May 2025*
B.S. Electrical & Computer Engineering Ithaca, NY

- GPA: 4.126/4.300, Summa Cum Laude

Research Experience

Cornell University *October 2023 - Present*
Undergraduate Research Assistant Ithaca, NY

- Contributed to the development of efficient algorithms for channel simulation, a framework for quantization-free lossy data compression, by leveraging the structure of error-correcting codes; collaborated closely with two graduate students as the sole undergraduate researcher.
- Designed Monte Carlo simulations (Python, Numba) to test compression schemes at-scale.
- Co-authored NeurIPS 2024 paper and companion workshop paper.

Independent Senior Project

- Completed an independent senior-year research project exploring generalizations of trellis-based quantizers, proving asymptotic rate-distortion optimality of resulting algorithms.

Publications

C=Conference, W=Workshop

[1] S.M. Sriramu, R. Barsz, **E. Polito**, A.B. Wagner, "Fast Channel Simulation via Error-Correcting Codes," Advances in Neural Information Processing Systems (NeurIPS), 2024.

[2] S.M. Sriramu, R. Barsz, **E. Polito**, A.B. Wagner, "Polar Codes for Channel Simulation," Workshop on Machine Learning and Compression at NeurIPS, 2024.

Internship Experience

CACI International *May 2023 - August 2023*
RF Engineering Research & Development Intern Florham Park, NJ

- Designed a new test fixture for the waveform synthesis board of an ultra-wideband software-defined radio, improving testing efficiency and ensuring compliance with system-level power and signal-processing requirements.
- Gained exposure to applications of communication systems in signals intelligence and defense contexts.

Teaching Experience

Cornell University *January 2024 - May 2025*
Undergraduate Teaching Assistant Ithaca, NY

- ECE 4670/5670: Digital Communication System Design
  - Improved the reliability and scalability of CommCloud, a USRP-based wireless lab system for the course, by integrating OFDM synchronization, data preprocessing, and diagnostic testing suites.
- ECE 3250: Signals & Systems Analysis
- ECE 3150: Microelectronics

Girls Who Code *May 2022 - August 2022*
Summer Immersion Program Teaching Assistant Remote

Honors and Awards

Berkeley Fellowship, *UC Berkeley* *August 2025*

- 1-year fully-funded fellowship awarded to top doctoral admits by UC Berkeley. One of <10 recipients in the EECS department in the 2025 cohort of over 150 admitted students.

Merrill Presidential Scholar, *Cornell University* *May 2025*

- Top 1% of university-wide class, selected for academic achievements and leadership.

Sibley Prize, *School of ECE, Cornell University* *May 2025*

- Top 4-year cumulative GPA of ECE graduates.

Undergraduate Research Award Honorable Mention, *Computing Research Association* *December 2024*

Eta Kappa Nu Inductee, *School of ECE, Cornell University* *December 2024*

Additional Training

Brookhaven National Lab *July 2025 - August 2025*

QIS101: Foundations of Quantum Information Science Summer School Remote

- Gained exposure to the fundamentals of quantum information science and quantum mechanics through a 6-week summer school led by the Co-Design Center for Quantum Advantage.
- Implemented quantum circuits with IBM's Qiskit environment.

Leadership and Volunteering

Co-President, *Cornell IEEE Student Branch* *January 2024 - December 2024*

Engineering Peer Advisor, *College of Engineering, Cornell University* *August 2022 - January 2024*