Eric Lei

CONTACT INFORMATION	111 Dryden Road Apt. 5M Ithaca, NY 14850 USA	*Email:* el536@cornell.edu *Phone:* (978)-263-5958

RESEARCH INTERESTS

Digital communications, signal processing, machine learning, applied mathematics, high-performance computing

EDUCATION

Cornell University, Ithaca, NY   2016 – 2020
B.S. in *Electrical and Computer Engineering*
Minors in *Mathematics* and *Computer Science*
GPA 3.88

HONORS AND AWARDS

NSF Graduate Research Fellowship, *National Science Foundation*	2020
Ganster Engineering Fellowship, *University of Pennsylvania*	2020
The Dean's Fellowship, *University of Pennsylvania*	2020
Tau Beta Pi	2019
Eta Kappa Nu, *Institute of Electrical and Electronic Engineers*	2018

RESEARCH EXPERIENCE

VLSI Information Processing Group, Ithaca, NY   Feb 2018 – Present
Undergraduate Researcher with Prof. Christoph Studer

- Positioning and localization in multi-antenna wireless systems
- Developed novel supervised and unsupervised inference models using Siamese neural networks to obtain location information from channel-state-information

Computer Systems Laboratory, Ithaca, NY   Jun. 2017 – Aug. 2017
Undergraduate Researcher with Prof. Zhiru Zhang

- Developed FPGA-accelerated implementations of cryptographic hash functions such as SHA and AES using high-level synthesis

INDUSTRY EXPERIENCE

MIT Lincoln Laboratory, Lexington, MA   May 2019 – Aug. 2019
Summer Research Intern, Group 99 (Integrated Systems and Concepts)

- Information theory and control systems design for free-space laser communication systems

MIT Lincoln Laboratory, Lexington, MA   Jun. 2018 – Aug. 2018
Summer Research Intern, Group 99 (Integrated Systems and Concepts)

- Read-out integrated circuits for imaging sensors. Performed RTL design and verification with synthesis/implementation on a Xilinx Ultrascale FPGA.

PUBLICATIONS AND PRESENTATIONS

E. Lei, O. Castañeda, O. Tirkkonen, T. Goldstein, and C. Studer, "Siamese Neural Networks for Wireless Positioning and Channel Charting," *2019 57th Annual Allerton Conference on Communication, Control, and Computing (Allerton)*, Monticello, IL, 2019, pp. 200-207.

E. Lei, O. Castañeda, and C. Studer, "Wireless Positioning via Twin Networks," poster presentation at *Cornell Undergraduate Research Board Symposium*, Ithaca, NY, USA, Spring 2019.

TEACHING

Teaching Assistant, Intro to Probability and Inference (ECE 3100)	Spring 2020
Teaching Assistant, Machine Learning for Intelligent Systems (CS 4780)	Fall 2019
Teaching Assistant, Digital Logic and Computer Organization (ECE 2300)	Fall 2018
Teaching Assistant, The Comp. Tech. Inside Your Smartphone (ECE 1210)	Spring 2018, 2019

CAMPUS INVOLVEMENT AND OUTREACH	**Expanding Your Horizons**, Ithaca, NY　　　　　　　　　　　　　　April 2019

CAMPUS INVOLVEMENT AND OUTREACH

Expanding Your Horizons, Ithaca, NY　　　　　　　　　　　　April 2019
Volunteer

- Helped under-represented minorities in high school learn about circuits in an educational workshop

Eta Kappa Nu, Ithaca, NY　　　　　　　　　　　　　　Oct. 2018 – Present
Member

- Led exam review sessions for freshman and sophomore level ECE classes

IEEE Cornell Student Branch, Ithaca, NY　　　　　　　Sep. 2018 – Feb. 2019
Corporate Chair

- Hosted information sessions for companies doing recruiting, professor talks for the student body

Cornell University Engineering Success, Ithaca, NY　　　Jan. 2018 – Dec. 2018
Tutor

- Tutor for students in Discrete Structures (CS 2800)

Cornell Cup Robotics, Ithaca, NY　　　　　　　　　　Jan. 2017 – Feb. 2018
Electrical Subteam Member

- Worked on electronic hardware and software for semi-autonomous R2-D2 robot

TECHNICAL SKILLS

- **Computer Languages**: C, C++, MATLAB, Python, Java, Verilog, R, PyMTL
- **Libraries/Packages**: NumPy, SciPy, Tensorflow, Keras, Scikit Learn, OpenMP, CVXPy, PyBind, Rcpp
- **Tools**: Git, Xilinx Vivado, Cadence Innovus