Eric Lei

CONTACT INFORMATION

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RESEARCH INTERESTS

Signal processing, machine learning, communication theory, high-performance computing

EDUCATION

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

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

Systems & Technology Research, Woburn, MA — Jun 2020 – Present
Summer Intern, Cyber Physical Systems

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
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