

ETHAN GORDON

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EDUCATION

Princeton University

June 2017

B.S.E. in Electrical Engineering *Summa Cum Laude*

Dept. GPA: 3.92 / Cum. GPA: 3.77

Certificates in Engineering Physics, Robotics and Intelligent Systems, Applications of Computing

Optical Engineering Award of Excellence, 2017

Rhodes Finalist, District 10, 2016

Shapiro Sophomore Prize for Academic Excellence 2015

Representative Coursework: *Neural Network Implementations, Integrated Photonic System Design, VLSI Design, Cryptocurrency, Quantum Computing Implementations, and prerequisites.*

Illinois Math and Science Academy (IMSA)

June 2013

High School

ACADEMIC RESEARCH

Photonic Neural Network (PNN) Design (Undergraduate Thesis)

September 2016 - May 2017

Princeton Lightwave Communications Laboratory (Publication Pending)

Princeton, NJ

- Program for Engineering Physics, Senior Thesis Award, 2017
- Demonstrated scalable calibration and control of a continuous OEO 3-layer FNN.
- Successfully trained a simulation of the physical dynamics with standard backprop techniques.

Multi-Mode Integrated Photonics (Junior Year Paper)

February 2016 - June 2016

Princeton Lightwave Communications Laboratory

Princeton, NJ

- Designed 3 experiments to test the ability of integrated MDM to expand aggregate bandwidth in PNNs.

Photonic Applications in Radio (Summer REU)

June 2015 - August 2015

Princeton Lightwave Communications Laboratory

Princeton, NJ

- Aided the process of integrating a photonic self-interference cancellation system.

WORK EXPERIENCE

Facebook, Connectivity Lab

June 2016 - August 2016, August 2017 - Present

Goal: Design hardware and software prototypes targeting connectivity in developing nations. Menlo Park, CA

- Subteam: Facebook Foundry with Prof. Ramesh Raskar

Student Employment

September 2014 - June 2017

Princeton University

Princeton, NJ

- Teaching Assistant: ELE 302, Car Lab (Spring 2017)
- Peer Tutor (Fall 2016 - Spring 2017)
- Student Technology Consultant (Fall 2014 - Spring 2016)

Navier, Inc. (Summer Internship)

June 2014 - August 2014

Result: Implemented a prototype distributed encrypted messaging framework.

Chicago, IL

- Open Source: [github.com/encryptedmessaging](https://github.com/ethankgordon/encryptedmessaging)

Techstars Chicago (Summer Internship)

June 2013 - August 2013

Result: Provided general software engineering support for ten start-ups.

Chicago, IL

INDEPENDENT PROJECTS AND COURSEWORK

Princeton Hyperloop (Fluxor)

Large Team Project

Goal: Complete a pod for the SpaceX Hyperloop Pod Competition.

Spring 2017

- Primary Roles: Mentor for control subteam. Analyzed pod dynamics and levitation physics.

Brown Robotics Olympiad, Participant and Mentor

Princeton Robotics Club

Goal: Build a "micro-mouse" to auto-navigate a maze.

Spring 2015 (3rd Place), Spring 2017

- Focused on Kalman state estimation, PID control, and graph traversal.

Hackathon Projects

Small Team Projects

Goal: In general, increase accessibility of digital solutions for those with disabilities.

2014-2016

- Android app subtitles + sound localization, **Top 10**, HackPrinceton, Greylock Hackfest July 2016
- Hands-free photo-resistant face authentication, **Best Use of AWS**, HackPrinceton Fall 2015
- Augmented Reality subtitles for the deaf (including localization), **Top 10**, HackPrinceton Spring 2015
- Webcam-only sign language spelling translator, **1st Place**, HackPrinceton Spring 2014

Semi-Autonomous Delivery Quadcopter

Princeton Robotics Club

Goal: Deliver temporary IDs to locked-out students.

Fall 2015-Spring 2016

- Primary Role: Designing/implementing an RF communications stack and scheme.

Ball-Catching Robot

Independent Project for ELE 302

Goal: Construct a robot that could catch a ball before it hits the ground.

Spring 2016

- Included hardware design and basic model predictive control. See <https://github.com/egordon/CarLab>

Implementing CoinJoin

Independent Project for COS 597

Goal: Implement protocol to add true anonymity in Bitcoin Transactions.

Fall 2014

- See <https://github.com/egordon/coinjoin>

SERVICE AND LEADERSHIP

Princeton Splash

2014-2017

Goal: Introduce high school students to STEM topics.

- Spring 2016 and 2017, *Hands-On Electrical Engineering*, Crash Course in Circuit Design
- Spring 2014, *In Space and Time, Everything is Relative*, Crash Course in Special Relativity.

Shruggers: Princeton's Non-Audition Performing Arts Coalition

October 2013 - June 2017

Goal: Allow everybody on campus to express themselves through performing arts regardless of ability.

- Coalition President, Mar. 2015 - Mar. 2016
- Acapellago No-Audition A Cappella: Founder, 2013-2017
- Lobster Club No-Audition Improv Comedy

Princeton University Band

September 2013 - June 2017

Goal: Encourage spirit across campus and enjoyment for its members, regardless of musical ability.

- Drill Master, Nov. 2015 - Nov. 2016
- Webmaster, Dec. 2014 - Dec. 2016

Koleinu: Jewish A Cappella

February 2015 - June 2017

Goal: Provide for Jewish students and celebrate Jewish culture.

- President, Nov. 2015 - Nov. 2016