

## Education

### Massachusetts Institute of Technology

Cambridge, MA

- B.S. in **Physics** and B.S. in **Electrical Engineering & Computer Science**
- M.Eng in **Electrical Engineering & Computer Science** (in progress)

Sep 2019 - Jun 2023  
Expected Finish: Jun 2024

## Notable Coursework

**Math:** Probability, Statistics, Discrete, Cryptography **Physics:** Materials, Relativity, Statistical, Quantum, Experimental  
**CS:** Programming, Algorithms, Data Structures, ML, Underactuated Robotics (G), Computer Vision, Security (G)  
**EE:** Circuits, Signals, Inference, Feedback Control (G), Embedded Systems, Microcontrollers

## Work Experience

### PhotonicsAI Lab, Yerevan State University

Yerevan, Armenia

Researcher in Chaos, Optics, and ML

Jun 2023 – Aug 2023

- Implementing optical computer for energy-efficient reservoir computing on chaotic dynamical systems (eg. liquid crystal)

### RespiQ – Breath-Tech Startup

Leiden, Netherlands

Algorithmic/Software Engineering Intern for R&amp;D

Jun 2022 – Aug 2022

- Created from scratch data processing pipeline and associated software
- Invented statistical metrics for quantifying progress of prototype development
- Took on many roles in small technical team (designing & debugging prototype, meeting w. suppliers/consultants, logistics)

### Resilient Infrastructure Networks Lab, MIT Civil Engineering

Remote

Researcher in Semiparametric Transportation Modelling

Jun 2020 – Oct 2020

- Studied transportation networks near the Bay Bridge, with a focus towards an accident on 5/29/19
- Created various ML models to predict accident behavior, quantified inefficiency of the system due to imperfect information
- Explored how time/day, amount of information, and time lag affect the transportation mode choice

### Crusoe Energy Systems

Brooklyn, New York

Data Science Intern

Jan 2020 – Feb 2020

- Wrote queries for data metrics, worked on front end display, produced report on company emissions and recordkeeping

## Featured Projects

### Programming

- Fantasy Premier League AI** (Python, Pandas) Full-stack, automated bot for complex game with planning (~10k lines)
- MemoryCenter** (Flutter + Django) Flashcard app for effective long-term memory retention and management
- Pyfit** (Python, Pytorch) Personal machine learning library
- Project Videos from MIT EECS Classes:** [https://www.youtube.com/channel/UCjZKF5U9tO\\_N3cvqNNdNYRA/videos](https://www.youtube.com/channel/UCjZKF5U9tO_N3cvqNNdNYRA/videos)

### Engineering

- Ulaanbaatar Heating Initiative** (MIT/Mongolia-Universities Collaboration) Applied anthropological (ethnographic research, stakeholder involvement) and engineering (sensors, molten salt) tools to complex heating situation in Mongolia

## Activities

### MIT Varsity Soccer Player

- University:** 2-Time All-NEWMAC (All-Conference) Team -- **HS:** State Champion, Captain, All-State (VA) and All-Metro (DC) Teams

### MIT Laptop Ensemble (Music)

- Live Coding:** Performed at Living Machines event at ZuZu bar in Cambridge
- Live Coding:** Performed at "Instruments, Interfaces, Infrastructures: An Interdisciplinary Conference" on Musical Media @Harvard, 5/2023
- Modular Synths:** Performed at MIT 2023 Spring "Met Gala."; Performed in several MIT concerts

### Self-Taught Chess Player

- Repeat World Open **Champion** (2018 u1400 1st/82, 2019 u1600 1st/165, 2021 u1800 T-8th/149) **Tactics:** lichess: 2600+, chess.com: 3200+

## Teaching

- Co-Taught class on "Puzzles & History of Mathematics" of our own design to 30+ students in *Splash 2019*
- Tutored & coached Math/Physics to a variety of learners ages 6-18 for 10+ years, currently active
- Served as Fraternity Scholarship Chair – Designed systems for collaboration, helped orient freshmen

## Skills

**Technical (software):** Python, C/C++, Assembly, Bash, SQL, Pytorch, Web (React/Flutter/Django), Go

**Technical (other):** Latex, Oscilloscope, Circuits, Music Processing, Solidworks, LTspice, illustrator

**Language:** English (native), Russian (advanced), Spanish (intermediate)