

# Brandon Lin

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🌐 <http://brandonlin.com>

## Education

### University of Pennsylvania

May 2020

**M.S.E.** in Data Science

**B.A.S.** in Computer Science

Minors: Statistics & Mathematics

Relevant Coursework:

Compilers & Interpreters

Advanced Deep Learning

Internet and Distributed Web Systems

Bayesian Statistics

Software Foundations

Operating Systems

Randomized Algorithms

Senior Thesis: *Differentially Private*

*Computation in Graphical and*

*Networked Domains*

## Skills

### Programming Languages

Python, Rust, Haskell, C, OCaml, Java,

PHP/Hack, JavaScript, Bash

### Frameworks

PyTorch, React/Relay/Redux,

GraphQL,  $\text{\LaTeX}$

### Interests

Speedcubing, music, mathematics

## Awards/Achievements

### 4-time Guinness World Record Holder

for Square-1 Average (Rubik's Cube)

### William Lowell Putnam Competition

Top 250 Finisher

### YouTube Creator

9 years with over 4000 subscribers

## Volunteer Experience

### Philadelphia Classic

Co-head Organizer (2018 - 2019)

### World Cube Association

Competition Organizer (2011 - present)

## Professional Experience

### Facebook, Software Engineer, New York, NY

July 2020 - present

### Facebook, Software Engineering Intern, Menlo Park, CA

May 2019 - August 2019

- Develop and design system and UI to monitor ML feature and model lifecycles and their relationships with datasets, feature importances, and feature transformations, used by Ads Ranking and Instagram ML teams
- Created functionality for Facebook's feature compiler to reference user package files in feature transform pipeline generation
- Designed Hack and Python API for computing global feature importances across Facebook's ML ecosystem to allow ML practitioners to understand the impact of their models' features

### University of Pennsylvania, Teaching Assistant, Philadelphia, PA

May 2018 - May 2020

- Teaching assistant for a variety of university classes, assisting with homework vetting, grading, teaching weekly recitations and holding office hours
- Courses TA'd: Deep Learning, Introduction to Algorithms, Machine Learning, and Mathematical Foundations in Computer Science

### Facebook, Software Engineering Intern, Menlo Park, CA

May 2018 - August 2018

- Provided foundation for Dynamic Ads experiment to analyze the impact of template video ads
- Developed bot that collects team member standups for accessible project transparency

### Penn Labs, PM, DevOps & Software Engineer, Philadelphia, PA

October 2016 - April 2018

- Managed deployment and fixed Django bugs for Penn Course Review
- Assisted in semesterly data deployment of Penn Course Review data
- Developed new features in Python for the API of the widely-used Penn Mobile app

## Projects & Research Experience

### RetroGame | <https://github.com/esqu1/retro-game>

May 2020 - present

- A **NES emulator** written in **Rust**, featuring full graphical support and CPU ISA emulation

### TorchLint | <https://github.com/esqu1/torchlint>

November 2019 - December 2019

- A **static analyzer** for PyTorch written in Haskell to detect device and dimension mismatches
- Employed advanced functional programming techniques such as applicative functors and state monad transformers to develop parser and linter for PyTorch's intermediate representation

### PennOS

October 2019 - December 2019

- Unix-like operating system** featuring a multithreaded priority scheduler, user-shell interactivity, job control, FAT-style file system, defragmentation utility, and hierarchical directory structure
- Winner of the best operating system in UPenn's undergraduate OS class (CIS 380 Fall 2019)

### Cloze-style Machine Comprehension | [brandonlin.com/cis700project.pdf](http://brandonlin.com/cis700project.pdf)

April 2019

- Machine learning research paper on improving deep architectures for reading comprehension
- Used **PyTorch** to develop novel attention-based architectures and LSTMs