

## Programming

- Python
- Java
- LaTeX
- HTML/CSS/JS
- Bash
- MATLAB
- PHP/Hack

## Frameworks

- Flask
- Scikit-learn
- Node
- MongoDB
- Processing

## Applications

- Git
- Mercurial
- GIMP
- Cyberlink  
PowerDirector

## Operating Systems

- Ubuntu Linux
- Windows

## Interests

- ML/AI
- Rubik's Cube
- Music
- Origami

## Education

### University of Pennsylvania — School of Engineering & Applied Science

Philadelphia, PA

B.A.S. Computer Science | Minors: Statistics [Wharton] & Mathematics

May 2020

- Coursework: Abstract Algebra I, Machine Learning, Big Data Analytics

3.99/4.00

### Stuyvesant High School

New York, NY

Advanced New York State Regents Diploma

June 2016

- Honors: AP Scholar with Distinction

4.00/4.00

## Professional Experience

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

May 2018 - Aug 2018

- Provided foundation for Dynamic Ads team A/B test for new video ads format
- Fixed product recommendation duplication that increased efficiency and eliminated recommendation timeouts
- Created a Messenger-style internal bot that collects team member standups for accessible project transparency

### CIS 160 (Discrete Mathematics), Teaching Assistant, Philadelphia, PA

January 2018 - present

- Work and help students to broaden understanding of discrete mathematics through recitations and office hours
- Write, review, and grade homework problems in topics such as combinatorics, proof techniques and graph theory

### Penn Labs, Project Manager, Dev Ops & Software Engineer

Oct 2016 - April 2018

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

## Projects

### MultiCuber | [github.com/esqu1/MultiCuber](https://github.com/esqu1/MultiCuber)

June 2017 - October 2017

- (Node.js, MongoDB) An international platform for online friendly speedcubing competitions
- Used Semantic UI to create front-end layout of competition rooms and Express for routing web traffic

### Penn Python SDK | [github.com/pennlabs/penn-sdk-python](https://github.com/pennlabs/penn-sdk-python)

Oct 2016 - Nov 2016

- (Flask) Developed features showing open study spaces, the Penn calendar, and laundry machine usage
- Incorporated new features into the Penn Mobile app, increasing user base by over 3000 students

## Research Experience

### The Steam Engine | [brandonlin.com/steam.pdf](http://brandonlin.com/steam.pdf)

March 2018 - May 2018

- Machine learning research paper on applying collaborative filtering methods to Steam game recommendations
- One of top 3 group research projects in UPenn's machine learning class (CIS 520 Spring 2018)
- Employed novel matrix factorization, neighborhood, and boosting models to accurately predict hours of play time

### UPenn, NLP Research Assistant, Philadelphia, PA

February 2018 - present

- Investigating clustering methods as a way to better understand word representations and embeddings

## Awards and Achievements

- **4-time Guinness World Record Holder** for Square-1 Average (Rubik's Cube)
- **USA Computing Olympiad** Gold Division Qualifier
- **YouTube** Creator (6 years) w/ over 3000 subscribers
- **American Invitational Math Examination (AIME)** Qualifier (2013-2016)

## Leadership & Volunteer Experience

### Philadelphia Classic, Competition Organizer

September 2017 - present

- Write programming competition questions that encourage student thinking in various algorithmic paradigms
- Assist in day-of operations including answering questions, selling apparel, and hosting awards ceremony

### World Cube Association (WCA), Volunteer & Competition Organizer

July 2011 - present

- Volunteered at over 20 regional competitions, leading competitor experience facilitation
- Organized first speedcubing competition at Penn since 2009, attracting over 100 competitors worldwide