

## Charles Cunningham

New York, NY 10128 • [ccunning@seas.upenn.edu](mailto:ccunning@seas.upenn.edu) • (917) 828-6430 • [charleycunningham.com](http://charleycunningham.com)

### EDUCATION

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**University of Pennsylvania**, School of Engineering & Applied Science – Philadelphia, PA May 2023  
*BSE in Computer Science* • Minors: Data Science, Mathematics • [Coursework](#) • GPA: 4.0/4.0

**Trinity High School** – New York, NY May 2019  
Hawley Prize (Top 3 Academic Record) • SAT: 1580/1600 • SAT2 Math II: 800/800 • SAT2 Physics: 800/800  
School Prize for Robotics • School Prize for Excellence in Physics • Captain of the Robotics Team

### PROFESSIONAL EXPERIENCE

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**University of Pennsylvania** | Teaching Assistant | Solving Hard Problems in Practice | Philadelphia, PA August 2021 – Present

- Hold twice-weekly office hours, contribute to development of course content and grading of coding assignments.

**Yext** | Software Engineering Intern | New York, NY June 2021 – August 2021

- Contributed to the full stack of configuration as code (CaC) microservices in Yext's knowledge platform, completing stories touching 323 files (+8542 / -3523 lines). Worked extensively with Java (utilizing advanced language features and powerful design patterns such as immutables, builders, streams, lambdas, dependency injection, dependency inversion, etc.), Golang, gRPC/Protobuf, SQL, Kafka, JS/React/HTML/CSS, and Git.
- Led frontend development (collaborating with product and design) on a webhooks management console.
- Developed a React Monaco code editor component for Yext's shared UI/UX library.

**Orchard** | Data Science Intern | Remote (due to COVID-19) June 2020 – August 2020

- Planned, proposed, and implemented an automated data science [pipeline](#) to streamline model development (utilizing Python, AWS/EC2/boto3/S3, Linux, Keras, TensorFlow 3, pandas, Jupyter, SQL, Flask, and JS/HTML/CSS). This pipeline improved the speed, cost, reproducibility, provenance, organization, robustness, and intuitiveness of the data science team's model development process.
- Received commendation from the company's Head of Investments and Data Science: "Your vision for the reproducibility pipeline was extraordinarily big, and, as importantly, you delivered on it."
- Developed 3 convolutional neural network ensembles to > 90% accuracy, now used in the core pricing model.

### LEADERSHIP EXPERIENCE

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**Penn Labs** | Penn Courses Team Lead, Full Stack Developer | Philadelphia, PA September 2019 – Present

- Lead the 12-person Penn Courses team, developing and maintaining web products used by 10k+ students and faculty.
- Developed the Django REST backend and data architecture for [Penn Course Plan](#) and [Penn Course Alert](#).
- Developed registration difficulty metrics for Penn Course Review, based on status updates and Penn Course Alert data.
- Implemented an [auto-docs system](#) using Django and Redoc (augmented with custom-developed features) for generating an OpenAPI specification and a detailed/human-friendly documentation web page for the Penn Courses API.

**Wharton Management Club** | Head of Consulting | Philadelphia, PA October 2019 – Present

- Lead WMC's 53-person consulting committee. Supervise consulting projects and ensure quality of final deliverables. Manage client acquisition, member recruiting, and project lead selection.
- Previously led a team of 10 members in a consulting project for Sapient, analyzing potential strategic partnerships.

### TECHNICAL SKILLS

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- **Proficient:** Java, Python, JavaScript, Git, React, TypeScript, HTML/CSS, Unix shell, C, C++, Django, Flask, SQL, Redis, REST, JSON, gRPC, Protobuf, YAML, JQuery, OpenAPI, Redoc, pandas, NumPy, Matplotlib, Seaborn, R, Tableau
  - **Familiar:** Go, AWS (EC2, S3, EMR), boto3, Keras, TensorFlow, Apache Spark, Apache Storm, Kafka, Node.js, Google ORTools (constraint programming)

### PROJECTS & OTHER ACTIVITIES

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- The [projects](#) section of my website contains my project portfolio.
  - Won Best Technical Solution at the London Strategic Consulting Digital Hackathon for my team's work on a vaccine logistics challenge (February 6, 2021).
  - Hold pilot's ratings in single and multi-engine land categories, with instrument ratings in both.
  - Serve as VP of the Penn Business Roundtable club, moderating discussions with business leaders from various industries.