Charles Cunningham

New York, NY • ccunning@seas.upenn.edu • charleycunningham.com

EDUCATION

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

University of Pennsylvania | Co-Instructor | Solving Hard Problems in Practice | Philadelphia, PA — December 2021 – Present
- Give lectures on SAT solving, mixed integer programming, and constraint programming.
- Develop course content, help students in office hours, and grade coding assignments.

Yext | Software Engineering Intern | New York, NY — June 2021 – August 2021
- Contributed to the full stack (backend and frontend) of configuration as code (CaC) microservices in Yext's knowledge platform, completing stories touching 323 different files (+8542 / -3523 lines).
- Led frontend development of a webhooks management console, collaborating with product and design.
- Developed a React Monaco code editor component for Yext's shared UI/UX library.
- Worked extensively with Java, JS/React/HTML/CSS, Golang, gRPC/Protobuf, SQL, and Git.

Orchard | Data Science Intern | Remote (due to COVID-19) — June 2020 – August 2020
- Planned, proposed, and implemented a model development pipeline to automate and improve many of the data science team's workflows. Improved the speed, cost, reproducibility, provenance, organization, robustness, intuitiveness, and onboarding simplicity of the 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."
- Worked extensively with Python, AWS/EC2/boto3/S3, Linux, Keras, TensorFlow, pandas, SQL, Jupyter, and Git.
- Developed three convolutional neural network ensembles to > 90% accuracy, now used in the core pricing model.

LEADERSHIP EXPERIENCE

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 descriptive/comprehensive documentation web page for the Penn Courses API.

Wharton Management Club | Head of Consulting | Philadelphia, PA — October 2019 – December 2021
- Led WMC's 53-person consulting committee. Oversaw consulting projects and ensured quality of final deliverables.
- Managed 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

Java, Python, JavaScript, TypeScript, OCaml, Git, React, C, Golang, Django, Flask, FastAPI, Node.js, REST, Kubernetes, Docker, SQL, Redis, gRPC, Protobuf, AWS (EKS, EC2, S3, EMR, DynamoDB, boto3, SSM), Apache Spark, HTML/CSS, jQuery, OpenAPI, JSON, YAML, GitHub Actions, Redoc, pandas, NumPy, matplotlib, Keras, TensorFlow, Google ORTools, R, Tableau

PROJECTS & OTHER ACTIVITIES

- 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 and data management challenge (February 6, 2021).
- Achieved FAA pilot 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.