

# Minghan Sun

+1 (425) 269-4412 | sunmi@seas.upenn.edu | github.com/minghansun1 | minghansun.com | linkedin.com/in/minghansun1/

## EDUCATION

---

### University of Pennsylvania

Bachelor of Science, Computer Science

Class of 2026

GPA: 3.83/4.0

**Relevant Coursework:** Data Structures and Algorithms, Object Oriented Programming, Discrete Math, Computer Systems, Automata/Computability/Complexity, Big Data Analytics, Databases

## EXPERIENCE

---

### Software Engineering Intern

*Amtrak*

November 2024 – April 2025

*Philadelphia, PA*

- Building custom PDF processor to automatically review modifications of track simulations for the traffic control team

### Backend Engineer

*Penn Labs*

September 2024 - Present

*Philadelphia, PA*

- Developed an ecommerce feature for Penn's official student app used by over 4000 students monthly
- Utilized Redis, Kubernetes, and Celery to ensure reliability and scalability in deployment
- Also contributed to an internal core library to help teammates reuse common design patterns and write cleaner code

### Machine Learning Research Assistant

*University of Pennsylvania*

January 2024 - Present

*Philadelphia, PA*

- Implemented SHAP, LIME, and Anchor algorithms in the STREAMLINE AutoML pipeline to increase model explainability. Used by over 70 clinicians at Cedars Sinai Medical Center to understand their models' decisions
- Analyzed the performance of 5 popular explanation frameworks on different data patterns

### Machine Learning Intern

*Pactera*

July 2022 - August 2022

*Bellevue, WA*

- Trained a machine learning model using PyTorch to detect gun violence from security camera video footage
- Applied object detection algorithms to classify people, handheld items, and posture

## PROJECTS

---

### SkyGazer (YHack Finalist) | *Flask, TypeScript, OpenAI API*

October 2024

- A web app to provide real-time ratings for stargazing conditions across the world, raising awareness for light pollution
- Used OpenWeather API and NOAA dataset for real-time cloud cover, visibility, light pollution, and elevation data
- Built chatbot that interprets our algorithm's predictions and recommends nearby locations using OpenAI API

### Algorithm Visualizer | *Django, React, JavaScript, PostgreSQL*

June 2024 - August 2024

- A web app designed to help Penn students understand algorithms taught in the Data Structures and Algorithms
- Used React to support visualization of Mergesort, Quickselect, Binary Search, BFS, DFS, Dijkstra's Algorithm, etc.
- Developed Django REST API and PostgreSQL to store user data and respond to requests within 50 ms 95% of the time

### Operating System Simulator | *C*

April 2024

- An OS simulator which simulates the logic-gate level behavior of the LC4 operating system as Assembly code runs
- Achieved 100% accuracy during testing on real Assembly samples

## SKILLS

---

**Languages:** Java, Python, C, C++, JavaScript, TypeScript, HTML, CSS

**Technologies:** Django, React, Flask, PostgreSQL, SQLite, MongoDB, Git, Docker, Kubernetes, Redis, Celery, CI/CD, Unix, AWS, Spring, Selenium, Axios, Pandas, NumPy, SciPy, Matplotlib, PyTorch, Scikit-learn, OpenCV, OpenAI API

## AWARDS

---

- 4-time AIME (American Invitational Mathematics Examination) Qualifier
- USA Physics Olympiad Honorable Mention (Top 250 in the US)
- American Rocketry Challenge 2022 1<sup>st</sup> place, International Rocketry Challenge 2022 2<sup>nd</sup> place