

# JAMES DOH

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[Linked In](#) | [Github](#) | [Website](#) | [AWS Certification](#)

## EDUCATION

UNIVERSITY OF PENNSYLVANIA, Philadelphia, PA

Expected May 2026

### BSE in Computer Science (Concentration in Artificial Intelligence)

- **GPA:** 3.95/4.0
- **Relevant Coursework:** Data Structures and Algorithms; Applied Machine Learning; Database and Information Systems; Big Data Analytics; Operating Systems Design and Implementation; Software Design and Engineering

## EXPERIENCE

PENN LABS, PHILADELPHIA, PA

Sep 2024-Present

### Software Engineer

- Took initiative to enhance Penn Course Review by integrating advanced search functionalities, capable of finding courses based on keywords, difficulty level, workload, and other criteria (in progress).
- Developed an interactive map feature for Penn Course Plan, allowing students to visualize and filter course locations by day for efficient schedule planning.

SOUNDABLE HEALTH, Seoul, South Korea

Mar 2024-Jun 2024

### Software Engineer Intern

- Optimized a Python-based path-finding algorithm to efficiently detect all possible paths of geo-spatial maps by leveraging morphological processing and graph algorithms, reducing running time by an average of 90 seconds.
- Built and launched web-trial version of proudP [\[link\]](#), leveraging AI to analyze users' urine sounds and provide a score on bladder health based on maximum urine flow rate (mL/s).

UNIVERSITY OF PENNSYLVANIA, Philadelphia, PA

Jan 2022-Apr 2022

### Teaching Assistant, Data Structures and Algorithms

- Led a 25-minute presentation for 50+ students on inductive analysis of recurrence relations and methods to find asymptotic runtime of code snippets, followed by Q&A from students.
- Facilitated accessible learning by leading weekly recitation, holding office hours, providing constructive feedback on student homework, and answering questions on Piazza.

## PROJECTS

### Media Pedia

Aug 2024 - Dec 2024

- Deployed and managed a PostgreSQL database on AWS RDS, hosting over 500,000 rows of movie, genre, rating, actor, and director data, and integrated it into a full-stack web application for browsing movie information.
- Implemented various query optimization techniques such as indexing, caching, and query restructuring to enhance performance of complex queries, reducing average running time by 10 seconds.
- Led end-to-end group project development, including data processing using Pandas, database schema creation, data insertion, query optimization, as well as full-stack development with React and custom API routes.

### C++ Web Server From Scratch

Aug 2024

- Collaborated with a teammate to design and implement a high-performance HTTP server written in C++.
- Prioritized a simple yet comprehensive web server that can handle multiple, simultaneous requests, manage dynamic paths, and also serve various static assets, including HTML, CSS, and JS.

### JP Morgan Chase Software Engineering Virtual Experience

Aug 2024

- Built a real-time data visualization tool using JP Morgan's Perspective library to simulate, display, and update key stock price information on a live graph every 0.1 seconds.
- Calculated the ratio between two stock prices, and identified potentially-profitable trading strategies by detecting deviations from historical upper and lower bounds.

### Penn Free Food Exchange [\[Link\]](#)

Oct 2023-Feb 2024

- Developed a platform where students can share leftover food by pinning locations on the map with captions and images, fostering community-driven approach to reducing waste and supporting sustainability.
- Implemented a notification system that sends text messages to users when new listings are posted.

### String Search Algorithm Visualizer [\[Link\]](#)

Jan 2024

- Created a website that provides visualization of popular string-search algorithms, including Knuth-Morris-Pratt (KMP) and Rabin-Karp, by animating how text and pattern are compared at each iteration.

## OTHER DATA

- **Technical Skills:** Python, C/C++, AWS, SQL, Node.js, Django, Flask, Java, TypeScript, JavaScript, Next.js, React.js
- **Activities:** Penn Labs, Hack4Impact
- **Courses TAed:** Introduction to Algorithms (upcoming); Data Structures and Algorithms; Intro to Computer Programming in Java; Engineering Pre-First Year (PFP) Program
- **Interests:** cooking, magic tricks