

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:** 3.94/4.0
- **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; Data Structures and Algorithms; Intro to Computer Programming in Java; Engineering Pre-First Year (PFP) Program
- **Interests:** cooking, magic tricks