

Youwei Jiang

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Education

Carnegie Mellon University

Aug 2021 – May 2025

BS Mathematics, Computer Science, Minor in Software Engineering

Pittsburgh, PA

- Selected Courses: Imperative Computation, Functional Programming, Computer Systems, Machine Learning, Principles of Software Construction, Great Ideas in Theoretical CS, Foundations of Software Engineering

Experiences

Knobull LLC

May 2023 – Present

Full-Stack Software Engineering Intern

Remote

- Developed a comprehensive, full-stack student news page using the MERN stack (MongoDB, Express.js, React, Node.js) and TypeScript, enhancing user experience and functionality.
- Implemented frontend design updates aligning with marketing strategies to enhance user experience.
- Optimized functionality of the student newsfeed subscription service through backend code development in Java.

CMU Human-Computer Interaction Institute, DIG Lab

May 2023 – Present

Research Assistant

Pittsburgh, PA

- Collaborated on Explainable AI and Eye into AI research projects, enhancing a full-stack AI-driven web application. Leveraged Firebase, Node.js, and Svelte for backend operations, server-side development, and frontend UI.
- Conducted user studies and performed data analysis to provide users with valuable insights into the decision-making process of AI models, contributing to the development of Explainable AI techniques.

igniteXL Ventures

Jun 2023 – Present

Software Engineering Extern

Remote

- Collaborated to develop a machine learning system in NumPy. Implemented version control and automated testing.
- Contributed to the end-to-end development and deployment of scalable software applications, following industry standards and Agile methodologies.

Projects

Music Analytics Framework | *Java, Javascript*

Feb 2023 – Apr 2023

- Developed a music analytics framework for playlist analysis, including artist frequency, song duration, and sentiment.
- Implemented efficient data plugins for popular music platforms including Spotify Music and Deezer, as well as local file parsing, enabling seamless integration of playlists from various sources.
- Integrated StanfordCoreNLP API to process song sentiment, allowing accurate categorization into positive, negative, or neutral, and visualized the analysis results using dynamic data visualization plugins like bar charts and pie charts.

JPMorgan Chase Software Engineering Virtual Experience | *Python, Typescript, React.js*

Mar 2023

- Developed an interface to seamlessly integrate with a stock price data feed, facilitating efficient data analysis.
- Implemented Perspective framework to set up data visualization and create charts for a trading dashboard using React.js, TypeScript, and Python. Contributed to the Perspective open-source project backend code.

8 Ball Pool Game! | *Python*

Nov 2021 – Dec 2021

- Designed and developed an interactive Pool Game, implementing mini-max Game AI and Monte Carlo simulation.
- Utilized Pygame framework to create a realistic simulation of ball scrolling, collision detection, bouncing physics, scoring system, and immersive sound effects for ball hits and collisions.

Computer Systems Labs | *C*

Oct 2022 – Dec 2022

- Developed a high-performance dynamic memory allocator using segregated lists supporting malloc, free, and realloc.
- Implemented a concurrent HTTP web proxy with LRU cache using multithreading and semaphore synchronization.
- Implemented a custom shell with foreground and background processes, I/O redirection, job and signal handling.

C0 Virtual Machine | *C*

Apr 2022

- Developed a Virtual Machine (C0VM) in C for executing programs written in C0, a typesafe language similar to C.
- Implemented essential features for C0VM, including stack frames, control flow mechanisms, integer and pointer arithmetic operations, memory access, and other key functionalities.

Skills

Programming Languages: Python, C/C++, Java, JavaScript(TypeScript), HTML, CSS, Standard ML, SQL, Swift, R
Framework and Tools: Git, Github, Firebase, Linux, Docker, React.js, Node.js, Svelte, MySQL, NumPy, PyTorch, AWS