Kailan Mao

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EDUCATION

Carnegie Mellon University May 2026

B.S. in Information Systems, additional major in Computer Science | GPA: 4.00

- **Relevant Coursework:** Data Structures and Algorithms, Functional Programming, Linear Algebra, Discrete Mathematics, Differential and Integral Calculus, Database Development, Application Development

SKILLS

Programming: Python, C/C++, SQL, Java, Standard ML, R, HTML, CSS, JavaScript
Frameworks & Tools: OpenCV, NLTK, Scikit-Learn, Tkinter, jQuery, MySQL, Linux, AWS, WordPress

EXPERIENCE

Research Assistant August 2023 - Present

CMU Privacy Economics Experiments Lab, Pittsburgh, PA

- Conducted extensive infrastructure testing on study's browser extension, email extension, MySQL database, and HTML reconstruction scripts to ensure proper collection and processing of participant data.
- Developed email reconstruction scripts that assemble fragments in database from 1200+ study participants.
- Implemented PII stripping scripts to remove personally identifiable information (PII) from collected data in order to protect participants' privacy.

Software Engineer Intern June 2023 - August 2023

TRACT, San Francisco, CA

- Implemented a social sentiment score model in Python that quantifies individuals' online presence, leveraging machine learning algorithms and feature engineering for accurate predictions.
- Collaborated with the machine learning team to optimize data preprocessing pipelines for more efficient handling of large-scale social media datasets.
- Developed social media scrapers to collect data from Twitter, LinkedIn, Instagram, and Facebook.

Web Developer May 2023 - July 2023

Re:Bloom, Pittsburgh, PA

- Crafted a responsive and user-friendly website using WordPress, catering to the unique needs of a local business.
- Collaborated with both the project team and the client to conceptualize and execute web design strategies, resulting in improved search engine optimization and 12% increase in web traffic.
- Created training materials and video tutorials, allowing the client to effectively manage and update their new site.

PROJECTS

C0 Virtual Machine April 2023

- Developed a virtual machine using C tailored for C0, a subset of C used in introductory programming courses, allowing for the execution of arbitrary C0 code.
- Devised an operand stack and frame mechanism to manage the execution flow within the virtual machine.
- Implemented bytecode execution processes, enabling mathematical operations, logical statements, memory allocation, array operations, function invocation, and generic pointers.

Movie Review Sentiment Analysis December 2022

- Implemented a sentiment analysis application in Python, using the Natural Language Toolkit (NLTK) library to assess the sentiment of movie reviews webscraped from Rotten Tomatoes.
- Created a mini game allowing users to compare their movie taste with Rotten Tomatoes reviews.
- Developed a search tool to retrieve the sentiment of movies, enabling users to quickly evaluate film reception.

Pac-Man December 2022

- Recreated the classic game Pac-Man using Python, featuring intuitive player controls, scoring system, and smooth animations developed with Tkinter.
- Programmed AI-controlled ghosts with DFS pathfinding algorithms to pursue the player.

AWARDS & ACTIVITIES

- First Place, CMU ACM Algorithms with a Purpose Hackathon (Beginner's Bracket) February 2023
- Mentor, Women in Information Systems Club August 2023 - Present
- Event Planner, Information Systems Ambassadors Club August 2023 - Present
- Member, Society of Women Engineers September 2022 - Present