

Kailan Mao

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EDUCATION

Carnegie Mellon University

May 2026

B.S. in Computer Science, minor in Mathematical Sciences | GPA: 3.96

- **Relevant Coursework:** Data Structures and Algorithms, Computer Systems, Linear Algebra, Probability, Database Development, Web/Mobile Application Development

SKILLS

Programming Languages: Python, C/C++, Ruby, Swift, HTML, CSS, JavaScript, Standard ML

Frameworks & Tools: Git, React, Ruby on Rails, Node.js, Next.js, PostgreSQL, MongoDB, WordPress, Figma

EXPERIENCE

Teaching Assistant

June 2024 - Present

Principia Tutors and Consultants, McLean, VA

- Created and proofread practice tests for SAT, ACT, and high school entrance exams aligned with official formats.
- Promptly graded and provided feedback on assignments before students' tutoring sessions.
- Maintained regular communication with parents to discuss consultations, student progress, and trajectory changes.

Research Assistant

August 2023 - May 2024

CMU Privacy Economics Experiments Lab, Pittsburgh, PA

- Developed email and HTML reconstruction scripts that assemble fragments in MySQL database from over 1,200 study participants.
- Implemented purchase scraping scripts to extract participant purchase behaviors from HTML data.
- 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.

Software Engineer Intern

June 2023 - August 2023

TRACT, San Francisco, CA

- Implemented a social sentiment model in Python that quantifies individuals' online presence, leveraging machine learning algorithms and feature engineering for accurate predictions.
- Collaborated with the application development 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 the client to design, wireframe using Figma, and user test a new website design, resulting in improved search engine optimization and increased web traffic.
- Created training materials and video tutorials, allowing the client to effectively manage and update their new site.

PROJECTS

TogetherTrip

December 2024

- Designed, built, and user-tested an iOS app in Swift to streamline group travel planning with shared itineraries, real-time updates, and content creation features.
- Integrated Firebase Firestore to enable real-time data synchronization for shared itineraries, posts, and comments.
- Added a map feature using MapKit, enabling users to search for locations and visualize travel routes.

Gotham City Police Department

May 2024

- Developed a fully functional web application for the fictional Gotham City Police Department using Ruby on Rails, HTML, CSS, JavaScript, and React, along with comprehensive unit and integration tests.
- Implemented user authentication, authorization, and a back-end SQLite database.
- Created a custom API for seamless communication with external systems.

AWARDS & ACTIVITIES

- First Place, CMU ACM Algorithms with a Purpose Hackathon (Undergraduate Bracket) February 2023
- Hackathon Organizer, CMU Association for Computing Machinery September 2024 - Present
- Member, Society of Women Engineers September 2022 - Present