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
Canyon Crest Academy, San Diego CA
GPA: 3.98   May 2022

COURSEWORK

- Data Structures and Algorithms
- Functional Programming
- Concepts of Mathematics
- Differential and Integral Calculus
- Linear Algebra

PROJECTS

Pac-Man in Python   Fall 2022
- Recreated the classic game Pac-Man using **Python** with intuitive player controls, a scoring system, and smooth animations to enhance user experience.
- Implemented ghosts that use a depth-first-search pathfinding algorithm to pursue the player, increasing the challenge of the game
- Developed original game graphics using Tkinter.

Flower Classifier using K-Nearest Neighbor Algorithm   Fall 2022
- Implemented a machine learning model in **R** to classify iris flower species with k-nearest neighbor algorithm.
- Trained and evaluated the model using the iris dataset from UCI Machine Learning Repository.
- Achieved >97% accurate predictions on test sets by optimizing the choice of hyperparameters using k-fold cross-validation.

Star Fighter: A Space Shooter Game   Spring 2021
- Implemented a space shooter game using **Java** with engaging gameplay and challenging enemy AI.
- Developed game logic and designed user interface, including player controls over movement and shooting, and randomly generated aliens.
- Incorporated features such as a scoring system, multiple lives, and bonus enemies to enhance gameplay.

EXPERIENCE & ACTIVITIES

Volunteer Web Developer
Re:Bloom, Pittsburgh, PA   May 2023 - Present
- Developed a responsive, user-friendly website for a small business using Wordpress.
- Collaborated with the client and Re:Bloom team to implement website improvements, boosting website traffic and enhancing online presence.
- Created training materials, including video tutorials, to help clients effectively manage and update their new website.

Math Tutor for AP Calculus   Aug 2020 - May 2022
Canyon Crest Academy, San Diego, CA
- Provided tutoring to 30 high school students preparing for the AP Calculus exam, covering topics including derivatives, integrals, and the Fundamental Theorem of Calculus.
- Prepared individualized notes to adapt to every student's learning style, successfully helping the majority of them receive a 5 on the exam.

Curriculum Writer for Words Alive   Mar 2020 - May 2022
San Diego, CA
- Developed and wrote lesson plans for English language arts programs for middle and high school students, following Common Core State Standards.
- Coordinated with other writers to revise and improve the accessibility of curriculums.
- Successfully designed a comprehensive curriculum that was implemented at a local middle school.

TECHNICAL SKILLS

Programming Languages: Python, C, Java, Standard ML, SQL, R
Web Design: HTML, CSS, JavaScript, React, jQuery

HONORS & PROFESSIONAL MEMBERSHIP

- Dean's List, High Honors   Fall 2022, Spring 2023
- Women in Information Systems Club
- Society of Women Engineers Member