Kelly Ma

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Education

University of California, Riverside — **Riverside, California**
B.S. in Computer Science — *September 2023 - June 2026*

Relevant Coursework: Data Structures and Algorithms, Discrete Structures, Software Design, Logic Design, Computer Architecture and Assembly Language Programming, Linear Algebra, Multivariable Calculus

Experience

Undergraduate Research Assistant — **Riverside, California**
University of California, Riverside (UCR) — *October 2024 – Present*

- Fine-tuning machine learning models (**SVM**, **XGBoost**) to detect AI-generated code in introductory computer science courses, determining code authenticity by analyzing beginner coding patterns and mistakes
- Improving model performance by applying Natural Language Processing techniques (tokenization, feature extraction)
- Identifying gaps in AI detection methods for education with literature reviews, contributing insights to inform research

Web Developer — **Riverside, California**
Association for Computing Machinery at UCR — *October 2023 – March 2024*

- Constructed static site generation websites for the Women in Computing (WINC) and Highlander Space Program (HSP) organizations, using **React.js**, **Next.js**, and **Tailwind CSS** to build responsive, user-friendly interfaces
- Eliminated 250 lines of redundant code for the WINC website by developing a map data structure and mapping algorithm to convert club event metadata into reusable **React components**, streamlining event display on Home and Event pages
- Refined navigation and accessibility on the HSP website by integrating a **Footer** component with contact details and social media links, boosting usability for 100+ members
- Enhanced website functionality by resolving mobile responsiveness issues and implementing prioritized features, collaborating with 8–9 developers in weekly scrum meetings and using **AGILE** methodologies for efficient task tracking

Software Engineering Committee — **Riverside, California**
BearHack at UCR — *March 2024 – June 2024*

- Contributed to the development of UCR's all-purpose hackathon portal by adding check-in and parking info buttons to the user dashboard and integrating hackpack links to streamline event logistics and project setup for participants
- Led an "Intro to GitHub" workshop during BearHack, helping novice participants understand version control and collaboration through hands-on demonstrations and explanations

Projects

I Woke Up in a Cave and All I Want is Wi-Fi — **github.com/kellyma626/rpg-cave-game**
C++, GoogleTest, GitHub Actions, Valgrind, GDB, Gcov, Lcov — *October 2024 - December 2024*

- Developed a terminal-based fantasy strategy game in a team of 5, implementing core mechanics and design features in **C++** to improve user engagement and gameplay flow
- Designed and integrated **Item**, **Potion**, and **Weapon** classes, managing item usage, stat modifications, and equipping/unequipping functionality with variable stat boosts to optimize gameplay dynamics
- Built a dynamic **Inventory** system with vector-based storage to streamline item management
- Validated functionality through unit testing with **GoogleTest** and CI pipelines using **GitHub Actions**, while debugging and profiling with **Valgrind**, **GDB**, **Gcov**, and **Lcov** to ensure optimal game performance

BearCare (for BearHack at UCR) — **devpost.com/software/bearcare**
React.js, Next.js, Tailwind CSS, GitHub — *April 2024*

- Implemented the frontend for a web app that simplifies locating local hospitals covered by specific insurance providers during emergencies, improving user access to emergency healthcare
- Created insurance plan selection buttons to streamline filtering, completing the project in 24 hours with 3 teammates

Technical Skills

Languages: C++, Python, HTML, CSS, JavaScript
Technologies: Git, GitHub, Visual Studio Code, GoogleTest, GitHub Actions, Valgrind, GDB, Gcov, Lcov
Frameworks: React.js, Next.js, Tailwind CSS, jQuery