

# Alvan Zhuang

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## EDUCATION

**California State Polytechnic University, Pomona | Pomona, CA**

Expected Graduation May 2025

**B.S. - Computer Science**

**Major GPA: 4.0**

**Coursework:** Computer Architecture, Computer Networks, Object-Oriented Design and Programming, Game Development, Mobile Development, Cloud Computing, Design and Analysis of Algorithms, Numerical Methods.

**Honors:** Dean's List [6x], President's Honors List [3x]

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## EXPERIENCE

**Research Assistant | CPP Mobility Scooter Research Project**

*Jan 2024 - Present*

- Collaborated with Kinesiology, Casa Colina Hospital, and UT San Antonio to develop machine learning models for detecting sway and movement changes to assess safety for mobility scooter users.
- Designed and implemented models using Vision Transformers, YOLOv8, and OpenCV2, improving the accuracy of movement classification and safety predictions.
- Optimized the mobile app's backend by resolving issues such as app crashes, improving data handling, streamlining user permissions, and ensuring smoother interactions for better performance and reliability.

**STEM Instructor Intern | Lavner Education**

*May 2024 - August 2024*

- Delivered high-quality educational instruction across diverse STEM subjects, including Web Development, Roblox World Building, Game Development (using GameMaker), and LUA Programming.
- Guided students through using API Ninjas (REST API) calls to integrate real-time data into their projects, such as fetching and displaying data from favorite genres, enhancing their understanding of data handling.
- Taught and mentored over 50 students, fostering a hands-on learning environment that improved their technical skills and creativity in game design and development.

**Lab Assistant | CPP VR Lab Spring 2024**

*Jan 2024 - May 2024*

- Provided critical feedback on ongoing projects, helping refine user experience and improve the quality of VR simulations.
  - Collaborated with students and professor to troubleshoot and resolve software bugs, leveraging VR tools and debugging techniques to ensure smooth project execution.
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## PROJECTS

**Modifier Mayhem (Group) |**

*C#, Unity*

- Developed a 3D first-person survival shooter game, contributing to both gameplay mechanics and visual design to deliver engaging game experience.
- Designed and implemented game mechanics and environments, balancing aesthetics and functionality to enhance player immersion.

**Cybersecurity VR Game (Group) | Google ExploreCSR |** *C#, Unity, Python, Flask, HTML, CSS, Javascript*

- Led a team in developing a VR simulation focused on educating users about cybersecurity threats, like phishing, with engaging gameplay mechanics and immersive user experience.
  - Collaborated with the data science team to analyze user data and adapt quizzes and study recommendations based on player performance, ensuring personalized learning paths.
  - Demonstrated the game at the Cal Poly Pomona Science Symposium, showing measurable improvements in user scores and cybersecurity skills.
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## TECHNICAL TOOLS AND SKILLS

**Languages:** Java, HTML, CSS, JavaScript, C#, Python, Kotlin, LUA, SQL

**Technologies:** Git, Unity, Android Studio, Replit, MongoDB, NoSQL

**Frameworks:** React.js, Pytorch, Node.js