

Alvan Zhuang

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EDUCATION

California State Polytechnic University, Pomona | Pomona, CA

Expected Graduation May 2025

B.S. - Computer Science

Total GPA: 3.99 /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 Honor's List [3x]

EXPERIENCE

Research Assistant | CPP Mobility Scooter Research Project

Jan 2024 - Present

- Utilized large-scale data from mobility scooter patients with impaired motor functions, collected from numerous hospitals, to develop machine learning models that classify behaviors and lead to improve mobility assistance technologies
- Developed machine learning models using Vision Transformers, YOLOv8 and OpenCV2 to label and predict movements for enhanced mobility assistance.
- Collaborated with a multidisciplinary team to integrate machine learning models into a user-friendly mobile app interface, enhancing the project's scalability and impact.
- Optimized the mobile app by resolving critical backend issues such as crashing bugs, improving permission management, and enhancing fluidity and movement functionality, ensuring a better overall user experience and performance.

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 calls (via API Ninjas) to integrate real-time data into their projects, such as fetching and displaying quotes from favorite genres, enhancing their understanding of external 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.

Aerospace Demo Assistant | CPP Inside

April 2024 – August 2024

- Developed interactive simulations and educational games using Unity, designed to simplify complex aerospace engineering concepts, enabling students to better grasp difficult concepts through hands-on learning.
- Collaborated closely with aerospace faculty to align educational tools with curriculum goals, contributing to improved student comprehension and engagement in difficult subject areas

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

PROJECTS

Modifier Mayhem (Group) | C#, Unity

Aug 2023- Dec 2024

- 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

Oct 2022 – May 2024

- Led a team in the development of a VR game designed to teach users how to protect themselves from cyberattacks, utilizing Unity and C# for gameplay mechanics and immersive user experience
- Demoed game to over 20+ participants at Cal Poly Pomona Science Symposium

TECHNICAL TOOLS AND SKILLS

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

Frameworks: React.js, Pytorch, Node.js

Technologies: Git, Unity, Android Studio

Database Systems: Replit, MongoDB, NoSQL