# Christopher Morales

Whittier, CA
323-516-8252 artorias961@gmail.com linkedin.com/in/artorias961 github.com/artorias961 Portfolio

## Education

**California State University, Los Angeles** **Aug 2023 – Present**
*Master of Science in Electrical Engineering, Biomedical and Computer Engineering specialization* *GPA 3.90*

**California State University, Los Angeles** **Aug 2020 – May 2023**
*Bachelor of Science in Electrical Engineering* *GPA 3.30*

## Work Experience

**Smart Program VR/AR/XR Tech for Virtual Learning Space** | *Team Lead* **Jan 2024 - Present**
- Integrated generative AI to enhance creativity among 23 interns, minimizing reliance on technical prerequisites
- Developed a comprehensive virtual lab environment using VR/AR/XR tech including COLMAP, Unity, and LucidVR gloves, enhancing user interaction and realism in virtual settings

**NSF CREST Center for Advancement toward Sustainable Urban Systems** | *Research Fellow* **Oct 2023 - Present**
- Developed advanced room occupancy detection and tracking techniques, enabling accurate monitoring and identification within confined spaces
- Designed and delivered engaging lectures, practical demonstrations, and hands-on lab experiments
- Mentored students in project development, helping them apply theoretical concepts to real-world applications

**Dept. of Electrical and Computer Engineering, Cal State LA** | *Teaching Associate* **Aug 2022 - Present**
- Developing and delivering engaging lectures in EE 2450 Embedded Systems I and EE 4689 Controls Lab
- Guided students in theoretical and practical aspects of embedded systems, leading to enhanced project implementations

**Dept. of Electrical and Computer Engineering, Cal State LA** | *Makerspace Assistant* **Aug 2021 - Present**
- Constructed and maintained a 3D printer and ultrasonic bath
- Developed equipment demonstrations PCB Design, Soldering, and Computer Vision

**Biomedical Engineering Society Officer** | *Officer* **Aug 2021 – Present**
- Facilitated hands-on practical sessions, enabling students to gain practical experience with industry-standard Computer Vision tools such as OpenCV, and Scikit-image
- Managed executive board of 5 members and ran weekly meetings to oversee progress in essential parts of the chapter

## Projects

**Localization and Tracking in ZigBee Bluetooth Mesh Networks** | *Thesis* **Aug 2023 - Present**
- Implemented and tested Time of Arrival and Angle of Arrival techniques, significantly enhancing the accuracy of real-time occupancy detection within indoor environments
- Implemented a Bluetooth Low Energy based occupancy detection system on Nordic nrf53dk using ZephyrRTOS within a Zigbee mesh network

**Robotic Dog** | *Team Lead* **Jan 2023 - Present**
- Directed the development of an autonomous tour bot integrating computer vision and LiDAR, enhancing campus navigation
- Led the design of a robust 3D printed chassis, optimizing for weight distribution and component protection

**Web Developer** | *Developer and Content Manager* **Dec 2022 - Present**
- Implement a range of technologies including HTML, CSS, JavaScript, and React, demonstrating proficiency in web development and user interface design
- Integrated APIs to fetch dynamic data and enhance interactivity, demonstrating skills in asynchronous programming and network communication

**3D Geometry Reconstruction of Medical Images** | *Team Lead* **Aug 2022 - June 2023**
- Applied knowledge morphological operations to clean input images and detect and track humans in real-time video
- Leveraged computer vision technology to identify individuals in need and facilitate their showering process by using an automated scrubber

## Technical Skills

**Programming Skills**: Python, C++, C, HTML/CSS/JS, Bash, Verilog, MATLAB, SQL, SQLite
**Hardware Skills**: PCB design, Measurement, DC Motors, Data Aquisition Systems, Oscilloscope
**Developer Tools**: Visual Studio Code, Docker, Redis, Windows Subsystem Linux, PCB Design, KiCAD, Virtual Box
**Technologies/Frameworks**: Linux, Django, GitHub, ROS, WordPress, Zephyr RTOS, Next.Js, Flask, Node.js, Bun