

# CHRISTOPHER MORALES

Whittier, CA

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## Education

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### California State University, Los Angeles

Aug 2023 – Aug 2024

*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

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### Northrop Grumman | *Electrical Engineer*

Aug 2024 – Present

- Developed and maintained test benches to streamline verification and validation processes, ensuring high reliability and compliance with technical specifications for defense systems
- Conducted troubleshooting and analysis of test setups and equipment, utilizing technical skills to optimize performance and minimize downtime in a fast-paced engineering environment

### Smart Program VR/AR/XR Tech for Virtual Learning Space | *Team Lead*

Jan 2024 - Aug 2024

- 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 - Aug 2024

- 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 - Aug 2024

- 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 - Aug 2024

- Constructed and maintained a 3D printer and ultrasonic bath
- Developed equipment demonstrations PCB Design, Soldering, and Computer Vision

## Projects

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### 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

### Localization and Tracking in ZigBee Bluetooth Mesh Networks | *Thesis*

Aug 2023 - Aug 2024

- 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

### 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

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**Programming Skills:** Python, C++, C, HTML/CSS/JS, Bash, Verilog, MATLAB, SQL, SQLite

**Hardware Skills:** PCB design, Measurement, DC Motors, Data Acquisition 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