Christopher Morales

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Objective

Electrical Engineering Graduate seeking to apply computer vision programming knowledge to develop research and the role of creating robotic parts to help assist and advance mankind.

Education

California State University, Los Angeles **Aug 2023 – Present**
Master of Science in Electrical Engineer *GPA 3.30*

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

Work Experience

NSF Crest Center for Advancement toward Sustainable Urban System Fellowship **Oct 2023 – Present**
Graduate Student *Los Angeles, CA*
- Proficient in room occupancy detection and tracking techniques, enabling accurate monitoring and identification within confined spaces

California State University, Los Angeles **Aug 2023 – Present**
Teacher Associate *Los Angeles, CA*
- Developing and delivering engaging lectures and practical demonstrations with hands-on lab experiments

California State University, Los Angeles **Aug 2021 – Present**
Makerspace Assistant *Los Angeles, CA*
- Executed the setup and construction of a 3D printer, ultrasonic bath, and conducted workshops on Canvas
- Developed equipment demonstrations and conducted projects of the Makerspace lab

Summer Making Academic prep and Research for Transfer Students (STAR) **Jun 2023 – Aug 2023**
Mentor *Los Angeles, CA*
- Facilitated hands-on practical sessions, enabling students to gain practical experience with industry-standard Computer Vision tools such as OpenCV, and Scikit-image

Projects

Robotics Dog | *Team Lead* **Jan 2023 - Present**
- Spearheaded the development of an autonomous tour bot for Cal State LA, incorporating computer vision, LiDAR, and various sensors, resulting in improved campus navigation for guests
- Led the mechanical design strategy, prioritizing weight distribution and component protection, resulting in a durable 3D printed chassis that effectively supported the robot's weight and ensured the safeguarding of critical components

3D Geometry Reconstruction of Medical Images | *Team Lead* **Aug 2022 - June 2023**
- Developed object detection numerical tool to detect, differentiate, and label bladder, vagina, and rectum
- Optimized each image by approximating contour of organs with stacks of ellipses and generated 3D parameterized models of all three organs

Biomedical Engineering Women Innovators | *Computer Engineering Assistant* **March 2021 - Aug 2021**
- Applied knowledge of morphological operations to clean input images and detect and track humans in real-time video as a Computer Engineer Assistant at BEWINNOR
- 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, JavaScript, Bash, VHDL, MATLAB
Hardware Skills: Soldering, Oscilloscope, Function Generator, DC Motors, Arduino
Developer Tools: Visual Studio Code, Docker, Redis, Windows Subsystem Linux, PCB Design, KiCAD, Virtual Box
Technologies/Frameworks: Linux, Django, GitHub, ROS, WordPress, ZephyrRTOS

Leadership

Biomedical Engineering Society Officer **Aug 2020 – Present**
Vice President *Cal State LA*
- Managed executive board of 5 members and ran weekly meetings to oversee progress in essential parts of the chapter.
- Led chapter of 30+ members to work towards goals that improve and promote community service, academics, and unity.