MJ Santos

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Education

Oregon State University (OSU) **– M.S. Robotics**
Accelerated Master's Platform; 24 grad credits in senior year; **GPA: 4.0** **Expected Jun 2027**
Oregon State University (OSU) **– B.S. Mechanical Engineering** (Robotics Control Option)
Minor: Computer Science; **GPA: 4.0** **Expected Jun 2026**

Experience

Engineering Intern, Curtiss-Wright Corporation - Portland, OR Jun 2025 – Present

- Reprogrammed a returned ECU to support required CAN frames at 250 kbps using C and rapid analysis of legacy firmware, EEPROM, and schematics, enabling same day modification and shipment back to the customer.
- Built a Python + Streamlit config generator that streamlined End-of-line (EOL) testing and calibration-load flows, cutting setup time by several hours per project.
- Automated ECU testing with CAPL and a CANoe GUI and built a batch loader for 200+ calibration parameters via UDS (0x2E), cutting setup from hours to minutes and streamlining programming across 100+ PCB boards.
- Designed & 3D-printed SolidWorks PCB fixtures for JTAG, power, and CAN, delivering 100% reliable connections.

Head Undergraduate Learning Assistant (Head ULA), OSU, School of EECS Jan 2025 – Jun 2025

- Led hands-on oscilloscope/circuit-bench labs for 24 students at a time and ran office hours/review sessions for ~100, producing comprehensive review materials and boosting practical mastery of circuit theory.
- Develop lab rubrics, pre/post lab answer keys, and homework solutions to coordinate with other ULAs, ensuring timely grading of each section.
- Received consistently positive student feedback, with reports of enhanced understanding and academic performance, including a student achieving a perfect score on a midterm.

Owner / Professional Tutor, Eugene Math Mentor - Eugene, OR / Remote Aug 2019 - Present

- Built and optimized a WordPress site with SEO, achieving #1 local Google ranking for math tutoring searches in Eugene; grew profile visibility to 2,079 views (Mar–Aug 2025) and 352 interactions despite no updates since 2022.
- Designed individualized curricula for Calculus, Differential Equations, Discrete Math, Probability & Statistics, and other Higher-Level Math, coached 1,000+ students (on different platforms) across 5,000+ tutoring hours; drove consistent A outcomes and measurable test-score lifts via problem decomposition and spaced-practice plans.

Projects

Holomat - ROS2, Python, OpenCV, MediaPipe, OpenAI API https://youtu.be/-vL0-piHwcM

- Implemented ROS2 hand tracking (MediaPipe) and a 5×5 homography calibration (NumPy) to generate M.npy, achieving sub-pixel projector–camera alignment.
- Built voice-command + UI nodes (OpenAI API + Pygame), enabling a touchless AR launcher with gesture control.

Automated Cocktail Maker - C/C++, Arduino, SolidWorks https://youtube.com/shorts/0VoF0etVfjk

- Programmed an Arduino-driven UI and pump control system, achieving <5% dosing error and <6 min dispense cycles.
- Modeled, printed, and assembled mechanical components in SolidWorks; conducted DfX/FMEA for manufacturability.

PC Simulation/Tycoon Game - Unity, C#, Blender In Development

- Leading end-to-end development of an original PC simulation/tycoon game in Unity (C#), designing gameplay systems, economy, and NPC interactions.
- Created optimized 3D assets in Blender and Marvelous Designer within a URP-friendly pipeline; oversee Git-based workflows, sprint planning, and cross-discipline coordination to ensure scope control and timely milestones.

Skills

CAD & Manufacturing: SolidWorks, 3D Printing (FDM & Carbon), DFM/DFA, FMEA, GD&T
Mechanical/Mechatronics: Prototyping, Motion Systems, PCB Fixture Design, Sensor Integration
Software: C, C++, Python, MATLAB, ROS2, OpenCV, CAPL, CodeWarrior, Streamlit, CANoe, CANalyzer
Electrical Systems: Raspberry Pi, Arduino, Microcontrollers, CAN bus (J1939/UDS), Oscilloscopes