

ELENA MONTALVO

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EDUCATION

California State Polytechnic University, Pomona

Bachelor of Science in Electrical Engineering

December 2023

Courses: Microelectronic Devices Circuit, Analog Microelectronics, Robotics, Advance Controls Systems, Electromagnetic Fields Signals and Systems, Analog Microelectronics Lab, Intro to Microcontrollers, Power Engineering, Digital Circuit Design, Verilog, Communications Systems, Data Structure and Algorithms, Computer Architecture, Mobile Autonomous Robots.

PROJECTS AND COMPETITIONS

Senior Project

Inertial Measurement Unit (IMU) Sensor Hub to test horses for Laminitis

August 2022 - December 2023

- Developed a Bluetooth-enabled embedded system sensor hub using the Seeed Studio XIAO nRF52840 Sense.
- Integrated a 9-degrees of freedom IMU and a high-g accelerometer via I2C communication.
- Packaged and analyzed sensor data using MATLAB to visualize and quantify the pitch, yaw, and roll of the horse's gait.
- Designed a battery management system to accommodate the test's physical constraints and longevity.

RSCA Conference 2023

Presented on Computer Vision Comparing Computer Architecture

November 2023 - December 2023

- Tested Python computer vision algorithms on 2 RISC architecture AML-S905X-CC and Raspberry Pi 4 Model B using Ubuntu (Linux) operating system.
- Analyzed the 2 microcomputer performance by measuring execution time, CPU, and memory usage to find the best microcomputer.

Student Innovation Idea Lab

RFID Security System

June 2023 - December 2023

- Developed an access control system using Raspberry Pi Pico W and RFID to manage technical equipment.
- Granted authorized users access to equipment and recorded equipment usage time.

WORK EXPERIENCE

Proworks/SigSys Inc

Business Administrator

January 2024 - May 2024

- Managed daily administrative operations, coordinating with proposal teams, project managers, and schedulers to ensure seamless cross-departmental workflows and project execution.
- Developed and implemented customized Smartsheet systems, improving team productivity and resource allocation by centralizing project information and ensuring accessibility for all stakeholders.
- Streamlined documentation processes by automating workflows, doubling project delivery efficiency, and reducing errors, contributing to improved overall project outcomes.

Student Innovation Idea Lab

Student Assistant

June 2023 - December 2023

- Collaborated with faculty and staff to align workshop content with curriculum goals, ensuring programs met educational standards and student needs.
- Planned and scheduled engaging workshops for training for 40 student ambassadors and over 1,000 students.
- Trained and assisted students across 3 locations in using equipment such as laser cutters, 3D printers, and vinyl cutters.

Maker Studio Student Ambassador

September 2022 - May 2023

- Maintained and troubleshooted equipment to ensure seamless operation, minimizing downtime and providing students with consistent access to resources.
- Assisted 5 students per hour in utilizing equipment to develop projects for academic and personal use.
- Cultivated a creative and learning-focused environment by providing students with diverse project ideas to enhance their development.

Ealpha Windows and Shutters

Marketing and Sales Associate

May 2020 – November 2022

- Created advertisements on social media targeting potential customers, reaching more than 1000 people weekly.
- Inform and persuade customers through phone calls and in person about the quality of the company's products.

NASA/CaSGC

Microcomputer & Robotics Internship

April 2017 - August 2017

- Designed and developed a research project with a team of three, presenting the findings at Armstrong Flight Research.
- Programmed and connected Arduino components, including a barometer, gyroscope, and altimeter, to record and analyze data on how different wing types affect flight.

SKILLS

- **Technical skills:** Solidworks Certified, AutoCAD, KiCAD, FreeCAD, PSPICE ORCAD, 3D Print, Laser Cut, Microsoft Office, 3D printers, Laser cutters.
- **Programming:** C, C++, Matlab, Simulink, C#, LabView, Python, VBA, Arduino, Verilog, ROS: Robotic Operating System, Linux
- **Languages:** Fluent in Spanish and English

AFFILIATE

Engineering Leadership Program · Maximizing Engineering Potential · Society of Hispanic Professional Engineers (SHPE) · The Institute of Electrical and Electronics Engineers (IEEE) · Society of Women in Engineering (SWE)