Marcelino Luis Alaniz, US Citizen, Open to Relocate
Houston, TX | 281-509-2678 |MarcelinoLAlaniz@gmail.com| www.linkedin.com/in/marcelinoalaniz | www.alaniz.me

Education

Bachelor of Science, Electrical and Computer Engineering, Rice University GPA**: 3.32** Expected May 2027

Associate of Art, General Studies, San Jacinto College GPA**: 4.00** Graduated May 2023

Skills: Python, Verilog, MATLAB, LTSpice, C, C++, Digital Logic Design, Machine Learning, Linux, Embedded, Microcontrollers, Technical Presenting

Work Experience

Rice University Technology Teaching Assistant, Houston, TX August 2024 - **Present**

- Support professors in utilizing Zoom, Canvas, and other educational software, enabling them to focus on delivering course content effectively.
- Provide on-demand technical assistance throughout the academic year to address and resolve any arising issues promptly.

NASA Summer Robotics Academy Internship May 2023 - August 2023

- Developed skills in mechanical systems design, security protocol compliance, and space vehicle systems.
- Contributed to NASA's robotics goals via maintenance of Space Exploration Vehicle, Microchariot, and other projects.
- Learned about advanced robotics systems and space vehicle design systems to protect against pressure, radiation, etc.

Robotics Summer Camp Counselor, Pasadena, TX May 2022 - August 2022

- Guided over 100 elementary students in a 3-week city robotics camp, fostering STEM engagement through hands-on activities with VEX GO robotics kits.
- Supported students in designing, building, and testing robotic projects, promoting teamwork, creativity, and problem-solving skills.

Technical Projects

Lane-keeping car using Raspberry Pi Zero, and MSPM0G3507 Microcontroller Programming

- Programming and debugging embedded C applications for microcontroller-based systems.
- Developing a lane-keeping algorithm using computer vision and sensor fusion for autonomous vehicle control.
- Designing and testing PCB layouts using KiCAD for microcontroller-based circuits with precise timing.

Houdini: Open-Access very Diverse Spectrum Platform for Wireless Networking, Imaging and Sensing November 2024 - **Present**

- Selected for research assistant role on the NSF-funded Houdini project, a groundbreaking initiative to develop an open-access software-defined radio system for 6G wireless technology
- Opportunity to gain hands-on experience with cutting-edge software-defined radio systems and multi-band wireless technologies

FPGA Digital Boolean Board Logic Design August 2024 - **Present**

- Designed Verilog logic for emulation of a 16-bit processor, implemented using Vivado onto a Real Digital Boolean Board with button and switch inputs
- Developing a 16-bit one cycle processor capable of executing simple assembly instructions for arithmetic operations

NASA Aerospace Scholar and Research Technician May 2022 - August 2022

- Developed skills in project management, lunar rover design, and mission planning through a 16-week self-study course.
- Developed a viable lunar rover concept with a team of 10, contributed to team success as research technician.
- Learned about space engineering documentation, engineering parameters, and working on a team.

Relevant Experience

Rice Robotics Club

- Designing and implementing power distribution systems for a lunar rover prototype, optimizing efficiency and reliability.
- Engineering dust mitigation systems to enhance the longevity of electronic components in harsh conditions.
- Collaborating with a multidisciplinary team to improve system performance and meet club goals.

Rice University ECLIPSE Rocketry Team

- Developed skills in sensor installation/calibration, temperature/pressure monitoring, and hybrid engine testing protocols.
- Contributed to the team's first flight-optimized hybrid rocket engine, generated test data for engine performance analysis
- Learned about test instrumentation and procedures, systems integration, and safety protocols for high-risk test scenarios.

MIT Minority Introduction to Technology, Engineering, and Science

- Developed skills in technical writing, engineering design process, and research methodology.
- Published an article on methane emissions, optimized a water rocket design with a team of 4 that flew over 100 feet.
- Learned optimization techniques, environmental technology, and the research and publication process of scholarly papers.

Relevant Coursework: Introduction to Physical Electronics (semiconductors), Digital Logic Design, Machine Learning Concepts and Techniques, Mobile and Embedded Systems Design and Application, Signals and Systems, Junior Design Laboratory