LIAM GOSS

liamjgoss@gmail.com | (559) 623-7877 | https://linkedin.com/in/liamgoss | https://github.com/liamgoss | https://liamgoss.xyz

EXPERIENCE

Upwork

Freelance Software Developer May 2024 – Present

- Developed custom software solutions for a diverse range of clients, consistently meeting project deadlines and exceeding expectations.
- Increased client satisfaction rate by 95%, exceeding targets.
- Utilized programming languages such as Python, Java, and JavaScript to create user-centric software, optimizing efficiency and usability.

NASA Jet Propulsion Laboratory,

Software Engineering Intern, Mission Control Systems Test, Integration and Deployment Team Oct 2023 – May 2024

- Developed a module for an internal NASA application using JavaScript and Svelte, automating the conversion of user-entered mission network details into XML files.
- Ensured full compliance with NASA JPL Telemetry, Tracking, and Commanding standards, reducing manual entry errors by 30%.

Test Automation Engineering Intern, Mission Control Systems Test, Integration and Deployment Team June 2023 – Aug 2023

- Constructed and maintained CI/CD pipelines for automated regression tests centered on Deep Space Network components, using Jenkins, Git, and Docker, resulting in a significant enhancement in testing efficiency and dependability.
- Created and maintained automated testing frameworks, reducing manual testing time by 50% and integrating with TestRail for seamless reporting and analytics.

PROJECTS

Automated IoT Hydroponics Engineering Senior Design Project

- Engineered a complete IoT hydroponics system for urban agriculture, incorporating sensor integration and remote monitoring capabilities while adhering to a $500 budget limit.
- Developed and integrated automated control algorithms for irrigation and lighting systems, achieving precise environmental management.
- Enhanced user interface and data visualization for real-time monitoring by utilizing Flask and MongoDB, amplifying user experience and plant condition tracking efficiency.

FPGA Game Console with Real-Time Operating System (RTOS)

- Designed a two-player LCD-based game in C running on Micrium RTOS, demonstrating real-time capabilities and achieving a seamless gaming experience.
- Developed custom Nios II system using Intel Quartus Prime, Qsys, and Eclipse, resulting in a functional game console prototype.

AES Side-Channel Analysis and Electromagnetic Fault Injection

- Conducted side-channel hardware attacks on AES using NewAE ChipWhisper, identifying potential vulnerabilities in cryptographic implementations.
- Performed Electromagnetic Fault Injection (EMFI) attacks on AES-256 using NewAE ChipSHOUTER, contributing to research in hardware security.

MIPS 32-Bit FPGA Processor

- Developed a Verilog-based 32-bit processor with pipelining, hazard detection, and forwarding, achieving a functional and efficient processor design.
- Simulated using Intel ModelSim and synthesized on Altera DE2-115 FPGA, resulting in a successfully operating processor.

EDUCATION

Master of Science - Cybersecurity and Information Assurance Expected Graduation: 2025

Western Governors University

Bachelor of Science - Computer Engineering Graduation: 2024

California State University, Fresno | GPA: 3.82 (Magna Cum Laude)

TECHNICAL SKILLS

Programming Languages: Python, C++, C, Assembly (ARM, MIPS, x86), Verilog, Node.js, Bash, Perl, MATLAB

Hardware Proficiency: Altera DE2-115 FPGA, NewAE ChipWhisper & ChipSHOUTER, Arduino, Raspberry Pi, SPI/I2C/UART protocols

Software Development Tools: Docker, Git, Vim, Xcode, ModelSim, Eclipse, Quartus Prime, MongoDB, VirtualBox, Jenkins, TestRail, Confluence