LIAM GOSS

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EXPERIENCE

Freelance Software Developer | Upwork | Remote | May 2024 - Present

- Developed custom software solutions for a diverse clientele, successfully completing all projects within deadlines and enhancing client satisfaction through consistent communication and efficient use of programming languages such as Python, Java, and JavaScript.Instantiated user-centric software employing Python and JavaScript that led to over 95% client satisfaction.

Software Engineering Intern | NASA Jet Propulsion Laboratory, Mission Control Systems Test, Integration and Deployment Team | Pasadena, CA | October 2023 - May 2024

- Engineered a module for an internal application at NASA, leveraging JavaScript and Svelte to decrease manual entry errors and facilitate a 30% improvement in data entry efficiency through automated XML file conversion.
- Designed and implemented user-friendly interfaces using Svelte, integrating with NodeJS back-end to automate the conversion of mission network details to standardized XML.

Test Automation Engineering Intern | NASA Jet Propulsion Laboratory, Mission Control Systems Test, Integration and Deployment Team | Pasadena, CA | June 2023 - August 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 | California State University, Fresno | August 2023 - May 2024

- 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) | California State University, Fresno | August 2023 - December 2023

- Developed and implemented a real-time LCD-based two-player game using Micrium RTOS on FPGA, ensuring low-latency interactions through efficient C programming.
- Engineered an FPGA-based game console prototype by programming a Nios II system using Intel Quartus Prime, Qsys, and Eclipse, achieving timely milestones.

MIPS 32-bit FPGA Processor | January 2023 - May 2023

- Optimized Verilog code for the 32-bit processor to include robust hazard detection and forwarding mechanisms, leading to improved data throughput by 20%.
- Validated the MIPS 32-bit FPGA processor by running a suite of benchmark tests, demonstrating a 100% accuracy rate in performance metrics and ensuring reliable computation.

AES Side-Channel Analysis and Electromagnetic Fault Injection | January 2023 - May 2023

- Analyzed power consumption patterns using NewAE ChipWhisperer Pro to uncover side-channel leaks in AES encryption, utilizing advanced statistical methods to enhance attack success rates.
- Designed and implemented targeted fault injection methodologies on AES-256 encryption using NewAE ChipSHOUTER, achieving notable insights in hardware security research.

EDUCATION

Master of Science in Cybersecurity and Information Assurance | Western Governors University

Salt Lake City, UT | 2025

Bachelor of Science in Computer Engineering | California State University, Fresno | Minor in Applied Mathematics | 3.82

Fresno, California | 2024

- Graduated Magna Cum Laude with Presidential Honors Scholarship.

SKILLS

Programming Languages: Python, C++, C, ARM/MIPS/x86 ASM, Verilog, NodeJS, Bash, Perl, MATLAB.

Hardware Tools: Altera DE2-115 FPGA, NewAE ChipWhisper & ChipSHOUTER, Arduino, Raspberry Pi, Serial Protocols.

Software: Docker, Git, Vim, Confluence, XCode, ModelSim, Eclipse, Quartus Prime, MongoDB, VirtualBox, Jenkins, TestRail.