Ivan Eduardo Guerra

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Professional Experience

Northrop Grumman - Aeronautics Systems **September 2019 - Present**
Principal Software Engineer (Active DoD Secret)

- Led a team of 3 in the development of a Cross Channel Data Link on RT Linux reducing the probability of UAV loss of control by over 10%.
- Negotiated with suppliers the software specifications for the next generation of flight control computers used in low cost UAV demonstrators. These UAV demonstrators would drive the capture of future contracts.
- Accelerated the development of multiple vehicles by creating Linux and Windows device drivers for a variety of sensors including IMUs, air data computers, and motor controllers.
- Redesigned the codebase build system to use CMake allowing for cross-platform build and test of product source code.
- Reduced the time to deploy on new hardware by using Docker to containerize common application code.

Raytheon - Space and Airborne Systems **June 2017 - September 2019**
Software Engineer II

- Implemented an air vehicle software instrumentation API in C++ that allowed the replay of software events post flight.
- Improved laser deconfliction system by implementing SAT location caching. The average time to detect an unwanted laser intersection with a satellite improved by an order of magnitude.
- Built a Jenkins CI pipeline to isolate faults and give developers early feedback on code changes.

ExxonMobil - Data and Information Systems **May 2016 - August 2016**
Intern Applications Engineer

- Created a tool for automatically generating optimal chemical cargo configurations.
- Reduced the probability of chemical payload contamination by implementing a cargo management UI to control cargo allocation across multiple vessels.

Education

University of Oklahoma: Norman, OK **Fall 2013 - Spring 2017**

- B.S.E. in Computer Science with minors in Mathematics and Spanish; Overall GPA: **3.95**/4.00

Languages and Technologies

- **Languages**: C/C++ (proficient), Python (proficient), Bash (proficient), Rust (competent)
- **Tools and Platforms**: Linux, Realtime Linux, FreeRTOS, Docker, Google Test, CMake, Git, Subversion, Atlassian Stack

Technical Projects

- **gsync** (2023). GPIO driven synchronization on a real-time Linux system. C/C++, Bash
- **steganography** (2023). An image based steganography command line tool. C++, Boost
- **cpplox** (2022). A C++ implementation of the Lox programming language. C++, Python
- **cosmo** (2022). Custom x86 operating system written from scratch. C/C++, x86 ASM, Bash