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 in a real-time Linux environment reducing the probability of unmanned air vehicle loss of control by over 10%.
- Negotiated with suppliers on 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 reusable Linux and Windows device drivers for a variety of sensors including inertial measurement units, air data computers, and motor controllers.
- Configured and benchmarked real-time Linux systems on both consumer and proprietary hardware solutions. Benchmark results drove the selection of safety critical vehicle components.
- Improved the probability of flight test success by creating and performing hardware in the loop simulations.

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

- Reduced the time needed to identify software defects during flight tests by implementing an air vehicle software instrumentation API in C++.
- 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, Embedded ARM, FreeRTOS, Docker, GoogleTest, CMake, Git, Subversion, Atlassian Stack
- **Protocols and Standards**: UART, I2C, SPI, CAN, RS422/485, MIL-1553, ARINC 429, WOSA, STANAG 4586, UCI

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