Ivan Eduardo Guerra

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Professional Experience

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

- Successfully led a team of four in the development of an Engine Control Unit (ECU) for an Unmanned Air Vehicle.
- Implemented a scalable Cross Channel Data Link on RTLinux providing redundancy on a number of vehicle sensor inputs.
- Created 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
- Graduate Coursework: Algorithms; Advanced Databases; Computational Complexity; Cryptography; Discrete Optimization

Technical Projects

- **Gsync** (2023). GPIO driven synchronization on a real-time Linux system. C/C++, Bash
- **Cosmo** (2022). Custom x86 operating system written from scratch. C/C++, x86 ASM, Bash
- **Lesion Map Prediction** (2021). A rat brain lesion map prediction tool using neural networks. Python, TensorFlow, Keras
- **Classification Utils** (2021). Tools for experimenting with hyperparameter tuning machine learning classification models. Python, scikit-learn

Additional Experience and Awards

- **Hypercube Scholar Award**: Named a Hypercube Scholar for outstanding undergraduate research in computational biology.
- **Teaching Assistant** (Spring 2017): Teaching assistant for a graduate course in cryptography; advised 33 students.

Languages and Technologies

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