# Ivan Eduardo Guerra

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## Professional Experience

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

- Led a team of 3 in the development of a Cross Channel Data Link on RT Linux 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

## 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

## 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

## 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.