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# Ivan Eduardo Guerra

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## Contact Information:

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## Social Media:

Personal Site: [www.programmador.com](http://www.programmador.com)  
GitHub: [www.github.com/ivan-guerra](https://www.github.com/ivan-guerra)  
LinkedIn: [www.linkedin.com/in/ivan-guerra](https://www.linkedin.com/in/ivan-guerra)

## Professional Experience

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### 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

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### 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

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- **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

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- **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

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- **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