Ivan Eduardo Guerra

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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: Cryptography; Computational Complexity; Discrete Optimization; Algorithms; Advanced Databases
- Undergraduate Coursework: Compiler Construction; Programming Language Theory; Operating Systems; Computer Architecture; Data Structures; Databases

Professional Experience

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

- Performed hardware trade studies by building low cost circuits and programming devices using the I2C and SPI protocols.
- Integrated FLIR camera image acquisition via GigE Vision, a feature that is critical to the product's near realtime image processing pipeline.
- Introduced the project to the Google Test unit testing framework and increased test code coverage by over 15%.
- Redesigned the codebase build system to use CMake allowing for cross-platform build and test of product source code.

Raytheon - Space and Airborne Systems **June 2017 - September 2019**
Electro-Optic/Infra-Red Pod Software Engineer

- Collaborated with System Engineers to design and implement a highly configurable laser deconfliction system providing the platform with the ability to safely fire a laser without damaging friendlies.
- Implemented a software instrumentation API in C++, providing the capability of replaying software events that occur during a flight test saving the company from having to repeat expensive tests to recreate software events.
- Created a configurable microservice generation script in Python that auto-generated C++ service template code. The creation of this script effectively reduced the time needed to develop new services by 30%.

ExxonMobil - Data and Information Systems **May 2016 - August 2016**
Manufacturing and Supply Applications Engineer **(Intern)**

- Automated the process of optimally loading chemical cargo aboard vessels by applying dynamic programming techniques, leading to a 20 hours per week time savings.
- Reduced the frequency of chemical cargo contamination by implementing a Java user interface to assist engineers in accurately managing cargo data.
- Applied user-centered design techniques to create a software requirements document, providing a base set of requirements for continued product development.

Technical Experience - Projects

- **Space Invaders** (2019). Clone of the original space invaders game. C++, CMake
- **Nearest Neighbors 3D** (2019). A nearest neighbors calculator for points in 3D space. C++, CMake, Googletest
- **Simplex Solver** (2016). GUI-based linear programming problem solver capable of solving nonstandard LPPs and detecting infeasible/unbounded LPPs. Python

Additional Experience and Awards

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

Languages and Technologies

- **Languages**: C/C++ (proficient), Python (proficient), Java (competent), CUDA (competent), Linux Programming (competent)
- **Testing Tools**: Google Test, GNU Debugger, Valgrind Memcheck/Helgrind, Gcov, Jenkins CI
- **Version Control Software**: Git, Subversion