Isaac Castillo

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EDUCATION

University of California, San Diego *La Jolla, CA*
Bachelor of Science, Mathematics - Computer Science *Sept 2016 - June 2019*
Major GPA: 3.67

SKILLS

- **Languages:** Modern C++, Kotlin, Python, Java, C, Haskell, JavaScript, C#
  Frameworks & Tools: Android SDK, Git, Linux, CMake, Docker, OpenGL, MySQL

EXPERIENCE

Shield AI *San Diego, CA*
Senior Software Engineer *February 2023 - Present*

- Senior Android Developer for Nova 2 Teaming, and iPRD, two follow-up programs from Nova 2, each utilizing their own Android application, successfully resulting in multi-million dollar contract awards for Shield AI
  - Conducted 50+ code-pairing technical interviews for prospective candidates, primarily using Kotlin and Java.
  - Subject matter expert for Kotlin flows, coroutines, modern Android libraries, MVVM app architecture including databases, networking, video streaming using GStreamer, video playback, offline map integration, etc.
  - Optimized our CI/CD pipelines for all of our Android software, and managed releases, build variants, libraries, and automated deployments using Azure DevOps leading to build, test, release cycles under 30 minutes.
  - Collaborated closely with the autonomy and testing teams, attended integration meetings, and war room discussions to squash critical bugs enabling us to release product well ahead of schedule.
- From October 2023, backend C++ developer for a standalone desktop application that can be used to command control teams of V-BAT aircraft
  - Contributed to web server using C++17 by augmenting command and control capabilities from VBC, and modularized our codebase to greatly improve testability, leading to a massive reduction of bugs.

Shield AI *San Diego, CA*
Software Engineer *January 2021 - February 2023*

- Android Developer for Nova 2, an autonomous flying robot using state-of-the-art path planning and computer vision algorithms, used to navigate multi-story buildings.
  - Maintained low-latency video pipeline using GStreamer and Java JNI to stream realtime video data from flying robots over a radio connection using C++, achieving speeds of under 100 milliseconds.
  - Updated our interactive mapping visualization feature on the Android app, using Kotlin and OpenGL which was praised by the UX team for ease-of-use, intuitiveness, and responsiveness.

Raytheon Technologies - Integrated Defense Systems *San Diego, CA*
Software Engineer *June 2019 - October 2020*

- Spent first 8 months working on a RedHat-based comprehensive navigation solution (GPNTS)
  - Implemented code to communicate with embedded navigation systems, using network programming, packing and unpacking binary data in C++ based on interface control documents.
  - Wrote RESTful services in .NET Core for our navigation simulators, and a full-stack application serving React.js webpages using Node.js and MongoDB as a backend solution for manual testing.
  - Wrote several analyzers in Python to evaluate the performance of the navigation solution's against the system requirements.
- Citing high performance on previous efforts, moved teams to develop microservices for a Cloud-Native container-based combat management system with Java Spring Boot and Kubernetes
  - Utilized DevOps tools including Jenkins, Git, Ansible, and more in a modern Agile environment.

Kastner Research Group - UC San Diego CSE *La Jolla, CA*
Undergraduate Researcher *Sept 2017 - June 2018*

- Member of a research group that investigated cross-correlation algorithms to pair sound signals from different recording devices using Python scientific computing tools to predict relative locations of underwater actors from autonomous underwater vehicles