Angel Macias

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EDUCATION

Carnegie Mellon University

Pittsburgh, Pennsylvania, USA

- Major in Robotics and Minor in Music

SKILLS

Programming Languages: C++, MATLAB, Python, C, SQL, Dart
Technologies: ROS, PostgreSQL, Linux (daily driver), Svelte, Flutter, Autodesk Fusion

EXPERIENCE

Merlin Labs *Houston, TX*

Software Engineer April 2020 - Current

- Primarily focused on developing a computer vision pipeline for detecting the values of the gauges and buttons on a plane's dashboard to automate flight checklists and reduce pilot workload
- Developed a logging pipeline for our RTOS-based automated flight system that automatically updates its own code to accommodate new message types
- Developed software for autonomous flight from takeoff to landing using C++, Python, and ROS
- Developed an end-to-end solution for automating data ingestion from flight tests to database reducing analysis and acceptance time by roughly 45% and improving developer experience by eliminating out-of-memory problems
- Developed safety-critical drivers for GPIO hardware that enables the operation of our software on a plane
- Regularly conduct and direct flight tests both on the ground and in the air

Nabors Industries *Houston, TX*

Robotics and Automation Software Engineer June 2019 - April 2020

- Worked on the Controls and Automation team responsible for developing software that controls the robotics on our oil rig platforms
- Developed Class 1 Ethernet/IP communication relay software, using C++17, which improved the communication speed between the PLCs and ROS-based software by 100x over the previous Class 3 implementation
- Developed software to automate the installation of the robotics framework software for over 120 of our rig platforms

L3Harris *Lafayette, LA*

Autonomous Software Engineer June 2018 - June 2019

- Worked on the artificial intelligence team developing collision avoidance software, primarily in C++11, that allows ships to safely drive themselves
- Implemented motion planning algorithms and improved existing implementations of motion planners with the help of various research papers
- Developed a motion planning test suite that generated nearly 500GB of data a day and helped improve our path planner's overall performance by 40% since its creation

PATENTS

Merlin Labs

System and Method for Aircraft Configuration Checking - #12242285

- In other words, an actual digital copilot for the plane
- Developed a system for monitoring signals of various types (digital, analog, visual), tracking their state relative to nominal conditions, and issuing warnings when conditions are off-nominal
- Additionally, automatically pulls up contextual digitized checklists that will aurally walk them through a flight check process