



Michael Bonnet | Résumé

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 MichaelBonnet

EDUCATION

University of Texas at Arlington

Bachelor of Science in Computer Science

Arlington, TX

May 2022

University of Texas at Arlington

Certificate in Unmanned Vehicle Systems

Arlington, TX

May 2022

SKILLS & TECHNOLOGIES

- **Programming Languages:** C, C++, Python, Ruby, Go, JavaScript/TypeScript, MATLAB
- **Software & Processes:** MATLAB/Simulink, Robot Operating System (ROS), Machine Learning, Tensorflow, Computer Vision, OpenCV, React, Git, Bash, Linux, Windows, Agile Development, Amazon Web Services (AWS)
- **Hardware:** Robotics, Commercial & Self-Built Drones, Autonomous Vehicles, Flight Controllers (Pixhawk), Raspberry Pi, Microcontrollers, Xilinx products (PicoZed SOM), Software Defined Radio (inc. RTL-SDR & LimeSDR)

EXPERIENCE

Turion Space

Flight Software Engineer

Irvine, CA

February 2023 - Present

- Designed and hardware-tested payload software in embedded C and C++ for DROID.001, a small photoreconnaissance spacecraft launched to low-earth orbit (LEO) in June 2023
- Developed Ruby on Rails-based mission control software hosted on AWS used for on-orbit spacecraft operations
- Operated DROID.001 spacecraft as Mission Operator and Flight Director throughout launch and early orbit phase
- Built Turion Space's proprietary STARFIRE API in Go using the Echo framework and a Postgres backend database for cataloguing and distributing orbital space domain awareness data

Terran Orbital

Flight Software Engineer

Irvine, CA

May 2022 - January 2023

- Configured custom Linux-based operating systems for NASA Pathfinder Technology Demonstrator satellites in low-earth orbit and for customers using Terran Orbital-designed satellites for their own missions
- Designed, developed, and tested performant C++ embedded software for projects totaling dozens of spacecraft
- Supported launches of company and customer payloads to low-earth orbit (LEO) and translunar trajectories with flight software troubleshooting both in mission control and on call

Lockheed Martin

Software Engineer Intern

Fort Worth, TX; Grand Prairie, TX

May 2021 - May 2022

- Implemented novel software controlling 6 DOF robotic arms used in manufacturing Patriot missile and F-35 parts
- Developed practices and documentation for properly using Git version control within an Agile (Scrum) development cycle, earning opportunity to continue working past the summer internship

PROJECTS

Network Exploitation Drone

Drones, RF Engineering, Penetration Testing, Networks

- Senior capstone project to build a drone that carries a Raspberry Pi sensor and networking payload that locates and identifies open Wireless Access Points before scanning the network and exploiting any vulnerabilities.
- Served as Team Leader on a six-student team that earned sponsorship from Elbit Systems of America; finishing 85% under budget and 6 months ahead of schedule

Autonomous LEGO EV3 Robots

Robotics, Python, Intelligent Systems

- Robot 1, "Solomon", solved a painter's tape-demarcated maze with known configuration, starting point, and goal point using A* search with a Manhattan distance heuristic
- Robot 2, "Rehoboam", using color and ultrasonic sensors, solved a similar maze with unknown initial position, with the goal of finding an object in the maze and pushing it out of position
- Robot(s) 3, "Babylon I, II, III", implemented the four behaviors of Braitenberg Vehicles, changing their velocity and heading based on where they perceive signals to be coming from via ultrasonic and IR sensors.