Drew Council

✉ andrew.p.council@gmail.com ☎ 770-833-1759 in drew-council ⌨ AndrewCouncil

EDUCATION

Bachelor of Computer Science, Electrical & Computer Engineering, Duke University   Graduating 2024
Completed classes in Data Structures/Algorithms, Computer Architecture, Networking, and Robotics.   GPA: 3.8

SKILLS

Python, C, Linux, ROS, ROS2, Docker, Git, Bash, Arduino, Verilog, Raspberry Pi, KiCad, AWS, C++, Java, Rust

EXPERIENCE

Software Engineer   Jan 2022 - Present
BotBuilt Robotics   *Durham, NC*

- Worked with others on an agile team to develop software for robotic construction of houses.
- Headed company DevOps, including managing CI/CD, developer tools, and embedded software deployment.
- Designed embedded hardware for a ROS2 network, providing services for actuator and sensor control.
- Containerized ROS2 applications into Docker images for several platforms and hardware configurations.
- Spearheaded CI for testing and development including automatic Docker container testing on pull requests.
- Integrated AWS hosting for automated Docker image builds with custom logging and error reporting.

Software Subteam Lead   Jun 2020 - Jun 2022
Duke University Robotics Club   *Durham, NC*

- Competed in annual RoboSub robot competition, where we designed a fully autonomous submarine robot to complete a variety of complex maneuvering and manipulation tasks in an unfamiliar underwater environment.
- Coordinated a 25+ member agile environment team using ROS, Docker, and Git to manage a shared codebase.
- Implemented PID, Sensor Fusion, Computer Vision, and SMACH to improve robot accuracy and capability.
- Earned 1st in Propulsion System, 3rd in Sensor optimization in 2021; 1st in technical report in 2021 and 2022.

Teaching Assistant   Aug 2021 - Dec 2021
Duke First Year Engineering Design   *Durham, NC*

- Guided small groups of students in project management throughout a semester-long design challenge.
- Provided technical expertise in actuators, programming embedded systems, sensors, and PCB design.

PROJECTS

Cell Robots Research, Duke General Robotics Lab   Feb 2023 - Present

- Designed omnidirectional grounded robot swarm for research in distributed control and communication.
- Researched algorithms to control a swarm of robots to perform tasks with low communication and orchestration.

"Aelevate" Bike Trainer, Duke Product Design   Sep 2022 - Dec 2022

- Used PlatformIO to write C++ embedded software to read sensors and control motors on a tilting bike trainer.
- Created a serial interface to communicate with a custom GUI application for touchscreen user control.

FPGA Typeracer-style Arcade Game, Duke Computer Engineering   Sep 2022 - Dec 2022

- Used Verilog to implement a MIPS-like pipelined processor to process serial input and generate VGA graphics.
- Implemented a head-to-head typing arcade game including display and keyboard drivers on an FPGA.

Room Availability Detection System, Duke Engineering First Year Design   Sep 2020 - May 2021

- Used a Raspberry Pi and Python to analyze and error correct PIR sensor data and detect a person's presence.
- Communicated this sensor data over a custom web API to publish room status and use statistics to a website.