McDonough, GA
(404) 547-7984
milesosborne182@gmail.com

# Miles Osborne

milesosborne.com
github.com/prowl107
linkedin.com/in/milesosborne

## EDUCATION

**Embry-Riddle Aeronautical University**                                                        **May 2023**
**Major:** Software Engineering        **GPA:** 3.505                                        *Daytona Beach, FL*
**Relevant Coursework:** Microprocessor Systems, Real-Time Systems, Operating Systems

## WORK EXPERIENCE

**Embedded Software Engineer Intern**            **Garmin**                        **Summer 2022**
- Launched application to verify hardware requirements based on ARINC 653 specification
- Prototyped applications to demonstrate interpartition and host to target communication
- Enabled multicore processing on Zynq-7000 FPGA

**Teaching Assistant**            **Embry-Riddle Aeronautical University**            **January 2022 - Present**
- Tutoring multiple students in ARM microprocessors, ARM assembly, and C programming
- Responsible for assisting students with in-lab activities and course assignments
- Writing a self-contained document detailing fundamentals of C programming

## CAMPUS INVOLVEMENT

**Spectre, Project Lead**            **Experimental Rocket Propulsion Lab (ERPL)**            **January 2020 – Present**
- Leading development of active stabilization unit on amateur experimental rocket
- Developing API & drivers for servo control for ATmega2560 and NXP i.MX RT1060 processors
- Designed Arduino shield PCB to interface flight computer with peripherals
- Re-architected design and requirements to improve maintainability and performance

## SOFTWARE PROJECTS

**Personal Website:** [milesosborne.com](milesosborne.com) (for additional information and projects)

**RTOS Water Tank Simulator**                                                        **March 2022 – May 2022**
- Created a user-configurable water-tank simulator using VxWorks RTOS
- Developed partial GPIO drivers for NXP I.MX6 Quad processor
- Integrated Adafruit soundboard to indicate current state based on water level

**STM32F4 MCU Drivers**                                                        **March 2021 – Present**
- Low-level drivers for STM32F4 microcontroller
- Support for I2C, SPI, and GPIO peripherals
- Developing Learning interrupt-based API for serial protocols

**Arduino Lightsaber**                                                        **May 2020 – June 2020**
- Built replica model lightsaber using an Arduino Nano Every microcontroller
- Implemented on-the-fly color changing with 2x ws281wb LED strips
- Utilized Adafruit Audio FX Sound Board for user-programmable sound fonts

## ADDITIONAL EXPERIENCE

- **Instructor (Summer 2021):** Taught C programming to members of ERPL and Spectre
- **Server Admin (February 2021):** Built Linux server running a self-hosted instance of GitLab for Spectre

## SKILLS

- **Software:** C, Embedded C, C++, Python
- **Hardware:** AVR/Arduino, STM32, ARM, NXP
- **Protocols:** I2C, SPI, USB
- **Web Development:** HTML, CSS, Javascript
- **CAD/Design:** Autodesk Fusion 360, KiCad
- **Operating Systems:** VxWorks