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Miles Osborne

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EDUCATION

Embry-Riddle Aeronautical University

Major: Software Engineering GPA: 3.505

Relevant Coursework: Microprocessor Systems, Real-Time Systems, Operating Systems

May 2023

Daytona Beach, FL

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 high-powered 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 (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