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Miles Osborne

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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 inter-partition 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 the fundamentals of C programming

CAMPUS INVOLVEMENT

Spectre, Software Lead **Experimental Rocket Propulsion Lab (ERPL)** **January 2020 – Present**
- Leading development of active stabilization unit on high-powered experimental rocket
- Developing servo control API for ATmega2560 and NXP i.MX RT1062 processors
- Designed Arduino shield PCB to interface flight computer with peripherals
- Built a Linux server running a self-hosted instance of GitLab for Spectre
- Re-architected design and requirements to improve maintainability and performance

SOFTWARE PROJECTS

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

NASA Vestibular Chair Restoration **September 2022 – Present**
- Collaborate with ERAU faculty to restore vestibular chair functionality
- Integrate STM32 Nucleo microcontroller to actuate analog components
- Maintain documentation for legacy hardware and new features

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

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

SKILLS

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