Adi Ramachandran

Embedded & Electrical Engineer | ECE Major @ Olin College, '23 | adinocap.com

EDUCATION

Olin College of Engineering, May ('23)

Bachelor of Science, Electrical and Computer Engineering (ECE)

Relevant courses – *Software Systems, Computer Architecture, Power Electronics, Computational Intro to Robotics, Engineering Systems Analysis, Data Structures & Algorithms, Modeling and Simulation*

EXPERIENCE

Formula SAE (Olin Electric Motorsports) — Testing Subteam Lead, Electrical Engineer

Testing Subteam | Telemetry Subteam | Cockpit Subteam | November 2019 - Present

- Managing & onboarding team of 8 new & returning members. Leading & co-developing **battery management system testing rig**, motor controller spoofer, python API extensions & github CI scheduler for team's **Hardware in the Loop system.**
- Configured & tested **custom battery pack** and designed **battery management system & PCB around LTC6810 chip** for vehicle 12V system, w/ **bidirectional load switch, OV & UV checks, cell balancing**.
- Wrote **embedded C** and built a data pipeline with **Redis & Docker** to implement wireless vehicle telemetry system. Allows team to stream, log, & visualize sensor data from vehicle CAN bus in real time.

MOMENTUS — Embedded Software Engineering Intern

Avionics Team | May 2021 - August 2021

- **Owned embedded software bringup** for 2 new revisions of PCB's flying on our V4 spacecraft.
- Developed & tested embedded C code for SAMV71 **baremetal resource-constrained ARM Cortex -M7** microcontroller, including **CAN bus** drivers, **RTD** drivers, **PID tuning, & finite state machines**.
- Designed ground support PCBs for avionics team & deployed motor drive test setups for solar array team

Acoustic Wells — Electrical Engineering Intern

IoT Hardware Team | January 2021 & June 2020 - August 2020

- Designed IoT sensing and datalogging **PCB's in Eagle,** currently deployed to oil fields in Utah & Texas.
- Simulated circuitry in **LTSpice**. Specified, designed, tested & debugged numerous PCB revisions.
- Wrote firmware for boards in **C** to log data & communicate over Bluetooth and cellular connections.

PROJECTS / VENTURES - see more & images on adinocap.com

Micromouse Challenge - Autonomous maze solving differential drive robot!

Implemented low-level robot controller, adaptive maze solving algorithm, & path planning with **ROS & Python**!

Robot Particle Filter project — Simulated bot localization within known map

Used **Python & ROS** to implement custom particle filter algorithm to probabilistically determine bot position.

Corewars — Algorithmic & critical thinking collaborative game software [deployed]!

Reimagined, developed (in React.js), and deployed Corewars in an Indian university as a teaching tool!

LifelinePi — Co-founder / developer - Enabling access to telehealth for older adults

Built a secure video-calling web platform with **React.js & Firebase** to interface w/ Raspberry Pi for startup.

SKILLS

Software - Embedded C/C++, Python, ROS, Matlab
PCB Design - Altium, Eagle, KiCad
Simulation & HDL's - LTSpice, Verilog
Web Development - React.js, Node.js, Redux

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