Adi Ramachandran

Electrical & Embedded 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 – *Power Electronics, Software Systems, Computer Architecture, CompRobo, Signals and Systems*

EXPERIENCE

Tesla Motors — Electronics Design Intern

Battery Electronics Team | June 2022 - August 2022

- Designed & simulated **critical interface circuitry** including signal conditioning, power supply, load switches, fusing, ISOSPI transceivers for new vehicle **high voltage controller** w/ **Altium, LTspice.**
- Designed and calculated error stackups for HV AC voltage sense & analog front end, isolated AC current sense, and power supply circuitry for new vehicle **AC distribution board**. Also floorplanned PCB layout.

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

Testing Subteam | Telemetry Subteam | Cockpit Subteam | November 2019 - August 2022

- Configured & tested **custom battery pack** and designed & validated LV battery management system PCB around **LTC6810 ASIC**, incl. **load switch, voltage & current sense, cell balancing**, and **wakeup circuitry**.
- Built **wireless vehicle telemetry system** to stream, log, and visualize sensor data from vehicle CAN bus in realtime. Tasks included writing **embedded C** and building data pipeline with **Redis, Grafana, Docker**.
- **Validated HV controller & HV BMS** on 2021 vehicle (incl. HV buck, iso-monitor latch, 6x 9s16p modules)
- Led and taught EE & vehicle fundamentals to a team of six new and returning members as subteam lead.

MOMENTUS — Embedded Software Engineering Intern

Avionics Team | May 2021 - August 2021

- **Owned embedded software bringup** for two new revisions of PCBs flying on upcoming spacecraft, using **baremetal C** for **SAMV71 ARM Cortex-M7** uC. Worked on **RTD drivers, PID tuning, FSMs, ADC drivers**.
- Designed ground support CAN <->USB PCBs in **Altium** & deployed solar array motor drive test setups.

Acoustic Wells — Electrical Engineering Intern

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

- Designed & laid out IoT sensing PCBs in **Eagle** incl. Apollo3 uC, load cell, accel/gyro, wrote firmware in **C.**

PROJECTS / VENTURES - see more, docs, & images on *adinocap.com!!*

Micromouse Challenge - Autonomous maze solving differential drive robot

Implemented low-level robot controller, adaptive maze solving algorithm, and path planning w/ **ROS & Python**.

Entrepreneurial Engineering Capstone - Second life EV battery applications

Working on identifying product market fit, **conducting interviews**, & exploring the EV battery supply chain.

Smart Ring Wearable PCB - Ultra low power, 12x20mm footprint embedded system

Designed & validated PCB around STM32WB55 uC w/ BLE chip antenna, accelerometer, 22mAh LiPo, and buck.

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

Reimagined, developed (in **React.js**), and deployed Corewars in a university in India as a teaching tool.

Tools: **PCB Design** - Altium, KiCad, Eagle, LTSpice, PSpice   **Software** - Embedded C, Python, ROS, Matlab, git

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