

Education

Mahindra University (formerly Mahindra École Centrale)
B.Tech Electrical and Electronics Engineering, GPA: 6.8

Hyderabad, India
August 2018 | May 2022

Skills and Experience

Programming Languages C, Python, MATLAB, Java, bash, various assemblies, web languages

Software Solidworks, Fusion 360, Siemens NX/Simcenter, LTSpice, Keysight ADS, MATLAB Simulink, Altium Designer, Eagle, Cadence Virtuoso, ANSYS Mechanical, MSC ADAMS, HSMWorks

Networking General systems administration on linux and windows servers, scripting and systems programming

Lab and Workshop Fairly competent at soldering, use of common electronic test equipment including multimeters, oscilloscopes, function generators, power supplies and spectrum analysers. Can operate, maintain, modify and service 3D printers (FDM and SLA). Handy with powertools. Can operate a manual mill and lathe. Can operate a CNC mill with FANUC control.

Academics Some experience with writing papers, can use LaTeX. Some experience with Teaching Assistantship, helped with a course for around 60 students.

Projects**Undisclosed project in high-speed digital design**

Unable to disclose details on this project as patent has not been filed yet. Contributions involved developing a system to simulate bit-error rate in SerDes systems, written in C. I also worked with PyBERT and Keysight ADS to supplement this simulation with more realistic test cases.

BGM4Life: Emotion estimation and music prediction

Developed a hardware unit that collected data from analog and digital sensors (including frequency sweep impedance measurement) that was lightweight and low power enough to be wearable, while supporting Bluetooth Low Energy for transferring data to an endpoint.

Electronics board for wearable gas sensor

Developed a wearable (watch-style) electronics board for a custom gas sensor, during an internship with a Georgia Tech-based startup, Wi-Sense LLC. The board had analog and digital components, including a transimpedance amplifier, ADC, power heater control, battery control, and Bluetooth Low Energy sections.

Mechanical and Electrical Design for Baja SAE

Designed and simulated a 4WD powertrain for a Baja SAE vehicle, including full CAD and manufacturing plans. In the process, developed a suspension solver in C in order to optimize suspension hardpoints by brute-force calculations given a set of constraints. Also designed a modular data-acquisition system for easily adding sensors to the vehicle using a custom CAN-like bus developed specifically for bit-banging on low-cost micros. Apart from cost, lack of availability of CAN-enabled microcontrollers in 2021 due to the chip shortage was a motivator for this.

Electric Bike Powertrain Design

Designed a full powertrain for an electric bike, including regenerative braking, optimized for weight given the constraints of a ruleset of a competition. Abandoned due to the competition itself being cancelled.

Drone design for LiDAR applications.

Designed and developed a drone for safely carrying a LiDAR sensor, with onboard electronics that could provide power to as well as record and store data from the LiDAR module. LiDAR could be controlled from the GCS as well as the transmitter.

5 Axis 3D printer

Designed a 3D printer with a tiltable nozzle and a rotating bed, allowing for some interesting printable geometries. Project abandoned due to lack of funding.

Clubs and Societies

Orion Club of MEC

Founding member, head till August 2021.

Founded the hobby RC modelling and flying club at MEC, helped create a basic inventory of common parts for student use, and managed the only 24x7 access student-lab/makerspace on campus.

Gas Monkeys Racing (Baja SAE) *Member from September 2018, Head from April 2020-September 2021, Currently senior mentor*

Started off as an electronics team member, helped brakes on the 2018 car. Continued with electronics and brakes but also helped with manufacturing during 2019 car. Designed from scratch the 2020 car for 4WD. Designed powertrain, suspension, brakes, drivetrain and electronics. Currently mentoring the team manufacturing this design, as the car could not be completed last year due to covid-19.

Relevant Courses I enjoyed

Linear Electronic Circuits

EE206, Spring 2020

– Prof. KR Sarma

Digital Electronics

EE205, Spring 2020

– Prof. Bharghava Rajaram

Numerical Methods

ES211, Spring 2020

– Prof. Satyanarayana Chirala

Communication Theory I

EE302, Fall 2020

– Prof. KR Sarma

Network Synthesis and Filter Design

EE303, Fall 2020

– Prof. Bharghava Rajaram

Computer Architecture and Design

EE318, Spring 2021

– Prof. Bharghava Rajaram

Stochastic Differential Equations

MA461, Spring 2021

- Late Prof. Vasudeva Murthy

Radar Systems and Signal Processing

EE455, Fall 2021

- Prof. KR Sarma

Nonlinear Dynamics and Chaos

MA474

- Prof. Senbagaraman Sudarsanam