

Mukilan

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ABOUT ME

I am a dedicated electrical engineer specializing and possessing solid experience in automotive electrical systems. Driven by a passion for sustainable engineering I am eager to seize opportunities in the field of designing innovative solutions that pave the way for a greener and sustainable future.

EDUCATION

Bachelor of Engineering –Electronics and Communication Engineering
Anna University, India (Kumaraguru College of Technology) 2021-2025

WORK EXPERIENCE

Lead- ELECTRICAL SYSTEMS 2023-2024

Team Sea Sakthi (India's official entry to Monaco Energy Boat Challenge 2024)

- **Led the electrical team** to design and implement the **electrical circuit of India's only energy boat** to participate in the Monaco Energy Boat Challenge.
- **Custom PCB** for the low voltage system of the boat to improve redundancy and reducing clustered wiring.
- Contributed to the development of an **indigenous 10kWh battery pack** gaining knowledge on thermal management, cell selection, and battery testing.
- Worked on **cost effective passive cooling system for the battery pack** which contributed to **winning the Innovation prize among 46 teams from 25 nations.**

Team Captain 2023-2024

Team E-Blitz (Electric ATV team participating in SAE BAJA)

- **Managing a team of 30 students**, overseeing resource allocation, deadline adherence, and overall design and manufacturing.
- **Optimized** the circuit for 5kW powertrain system reducing the weight of electrical wiring by **35%** and improving robustness.
- **Guiding** 30 students under **6 different domains** for the successful completion of the vehicle.

PROJECT MANAGER

RIG -Bike (Intra Campus Mobility Vehicle) 2021-2023

- Initiated and developed the RIG bike, an **electric inter-campus mobility scooter** for faculty.
- Designed by a team of 10, it is equipped with a **1 kWh battery** and **250W motor** with a range of **75 km/charge.**
- Organized the NEBC competition for the last 2 years, inspired by the RIG-Bike project, **coordinating 10 teams**, overseeing **preparation of rulebook and technical inspections** at the event.

PROJECT

Development of an all-Electric Catamaran Boat

2023-2024

- Developed an electric circuit powering and controlling two 6kW electric propulsions gaining insights on **wire selection, wire harnessing, circuit design and optimisation**.
- **Designed and implemented a PCB design** for the LV system in the boat, cutting wiring clutter by 60% and improving overall system efficiency, leading to a 30% decrease in troubleshooting time.
- **Effectively diagnosed and debugged** various malfunctions in the circuit components during the competition.
- Assisted in the development of a 10kWh battery featuring an innovative low-cost **passive cooling system** and advance **BMS paralleling** technique to improve safety, scalability and redundancy.

Development of electric All-Terrain Vehicle

2022-2024

- Oversaw finance and management of the team gaining knowledge on **budget planning, material procurement, and finance management**.
- Developed a **Data Acquisition system** to monitor the power consumptions of the vehicle.
- Participated in **SAE BAJA** one of the top ranking and highly recognised student engineering competition across the globe.
- Successfully oversaw the fabrication of the vehicle as the **manufacturing lead** of the team.

Development of Inter campus mobility vehicle

2022-2023

- Explored the **use of IoT** and implemented smart features like **smart helmet, range limiting** using GPS and **accident detection** on electric two wheelers.
- **Certified** in designing electric two wheelers by SAE ISS.

AWARDS & ACHIEVEMENTS

2022-2024

- **Winner** of the Design, Innovation, Communication, and Town Hall prizes at the Monaco Energy Boat Challenge (2024).
- **Certificate of Recognition:** Awarded for my work as Electrical Lead in Monaco Energy Boat Challenge 2024.

SKILLS & SOFTWARE

- Programming C and JAVA
- KiCAD
- MATLAB
- SolidWorks
- Marineshift360
- ALTIVUM

LANGUAGE

- **Tamil**
- **English**