

# Tanuj Rai

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## Education

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### B.Tech in Electrical and Electronics Engineering

2023 – Present

Vellore Institute of Technology, Chennai

CGPA: 8.6 / 10

## Skills

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**Core:** PCB Designing, Power Electronics, MATLAB, Simulink

**Tools:** MATLAB, Simulink, KiCad , Ansys Electronics Desktop

## Experience

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### PCB Design Intern – Multi Dimension Technologies, Bangalore

June 2025 – July 2025

- Verified and tested a 6S Battery Management System circuit.
- Designed and simulated a power supply PCB for a VESC used in electric vehicles.

### EV Prototyping Intern – NEXEV, VNEST, VIT Chennai

April 2025 - July 2025

- Responsible for prototyping, BMS development, and integration for an EV charger system.
- Working on component selection, PCB prototyping, and system-level testing.

### PCB Intern – Prism Studio

Remote

- Designed PCBs including a voltage regulator and a smart USB for current and voltage measurement (4-layer).
- Created custom footprints and was awarded **Best Performer Intern**.

### Summer Intern – Indian Space Lab

Remote

- Gained exposure to geostationary satellites, drone ESCs, and CanSat systems.
- Designed a circular 4-layer CanSat PCB integrating sensors such as DHT22, MQ5, MPU6050, BMP280, and ESP module.

## Projects

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### Gesture-Controlled Car and Sign Language Assist Device

ESP32, OLED, Flex Sensors

- Designed a dual-function system: one for controlling a car via hand gestures using ESP32 and gyroscope (Wi-Fi), and another for converting finger gestures into basic messages on an OLED display for sign language communication.

### PCB Design for Buck Converter

MATLAB, KiCad

- Simulated a buck converter (24V to 12V) in MATLAB with real-time parameter tuning.
- Selected appropriate components based on current and voltage ratings and designed a compact, single-layer PCB for the converter.

## Certifications

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- PCB Designing – Pantech ProED Pvt. Ltd.

- IoT and Embedded Systems – University of California (Coursera)

- PLC Training Program – VIT Chennai

## Positions of Responsibility

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### General Secretary – HAVOLTZ Club (EEE Dept.)

2025 – Present

- Managing technical events and workshops such as PCB design during techfests like IIT Bombay's Meshmerize.
- Involved in overall club operations and member coordination.

### Treasurer – Cloud Ops Club

2025 – Present

- Overseeing financial planning, budget allocation, and resource management for the club's activities.