

# PATAN SALARKHAN

**Electrical & Electronics Engineering.**  
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## SUMMARY OF QUALIFICATIONS

- Aspiring Electrical & Electronics Engineer (Undergraduate, B. Tech) specializing in AI for Autonomous EV Systems & Mobility, with expertise in railway signalling, embedded systems, AI integration. Experienced in real-time data loggers, network failure analysis, Raspberry Pi development, and safety-critical automation. Passionate about developing AI-based solutions for Energy, railways, EVs, aerospace, healthcare, and smart mobility.

## Key Highlights

- Winner, NASA International Space Apps Challenge 2025 (Art & Technology, VIT-AP)
- Awarded 2nd Prize in Innovation Day at VR Siddhartha University for demonstrating technical Prototype innovation.
- Secured INR 14 Lakh total national Student grants for AI-based Railway Inspector, ranked Top 2 India at IIT Bhilai.
- Completed 6 Months On-site Railway Signalling Internship with hands-on RTU & Data Logger testing/maintenance.
- Regional Finalist, IIM Calcutta Innovation Park (Maruti Suzuki Cohort)
- Invitee, IIM Bangalore x Alstom Sustainable Mobility Program

## EDUCATION

### KLEF Deemed to Be University

Bachelor of Technology in Electrical and Electronics Engineering (EEE)

Vijayawada, AP

April 2026

Specialization: Autonomous EV Systems Mobility & EVT

- CGPA: 8.22/10
- Selected INR 40,000 for Smart Bike Key Remainder Project from KL ACIC.

### A.A.N.M. & V.V.R.S.R. Polytechnic, Gudlavalleru

Diploma in Electrical and Electronics Engineering (EEE)

- Percentage: 68.85/100

Gudlavalleru, Krishna District, AP

November 2020 – April 2023

### GM HIGH SCHOOL

Secondary Education

- 536/600 (9.3/10)

Gudivada, Krishna District, AP

## INTERNSHIP EXPERIENCE

### Efftronics Systems Pvt. Ltd.

July 2022 – January 2023

Mangalagiri, Andhra Pradesh

#### DATA LOGGER MAINTENANCE, NETWORK FAILURES, INSTALLATION

- Installed, tested, and commissioned data loggers and control units across multiple railway stations to ensure reliable signalling and network performance.
- Led onsite troubleshooting, annual maintenance, and validation of analog/digital inputs for smooth operation of real-time railway monitoring systems

## TECHNICAL SKILLS

- Core Skills:** Hands on ESP32, Raspberry PI 5, Equipment Testing & Installation, Battery Management Systems, CAN BUS, IoT Testing & integration, railway signalling systems, Sensor Integration, AI -driven Diagnostics.
- Programming Languages:** Python, C Programming, Open CV, Computer Vision, Git, Generative AI integration.
- Soft Skills:** Innovative mindset, Effective Communication, Adaptability, Design Thinking.
- Software:** MS Power Point, MS Word, Autodesk Fusion 360, MATLAB, Simulink.

## PROJECT EXPERIENCE

### 1. Smart Energy Monitoring and Control System for homes

Tools: Flutter, API, ESP32, MQTT, Current & Voltage Sensor.

Live Electricity Consumption Monitoring with Prediction and Billing

- Developed ESP32-based IoT system for real-time energy monitoring
- Enabled remote appliance control and predictive bill forecasting

### 2. Intelligent Energy Monitoring & Predictive Fault Detection System in Electrical Vehicles using CAN Bus & LLM

Tools: Raspberry PI, BMS, Python, Gemini API, CAN BUS, ESP32.

AI Vehicle Diagnostic and HMI Voice Assistant

- Developed a real-time EV health analytics platform (ESP32, CAN, RS485) with AI-driven fault detection and energy optimization.
- Built intuitive dashboards and a multilingual assistant for battery diagnostics, trip, and charging recommendations.

### **3. Railway Track Inspection Robot (Selected for INR 14 Lakhs Government Grant) (Ongoing)**

*AI Track Faults and fasteners Detection and Real-time Data Sharing (in development)*

- Designed Proof of concept (PoC) vision-based robot for railway track damage detection
- Integrated real-time alerts and anti-theft features for national selection

## **STUDENT GOVERNMENT GRANTS AND RECOGNITIONS, ACHIEVEMENTS**

### **1. STPI (Software Technology Parks of India) Kalpataru CoE, Vizag – INR 4 Lakhs Grant Funding**

#### **Railway Track Inspection Robot**

November 2024

- Secured INR 4 Lakhs Grant for Railway Track Inspection Robot Project under Industry 4.O OCP
- Recognized in University under Project Grant at 3<sup>rd</sup> Year BTech

### **2. IIT BHILAI – INR 10 Lakhs Under GENESIS SCHEME**

March 2025

- Raised INR 10 Lakhs for Railway Track Inspection Robot Under **GENESIS SCHEME by MEITY**
- Selected as **Top 2 among 19 teams in Final Round** from All over India

### **3. NASA International Space Apps Challenge 2025 - Winner (VIT-AP Local Event)**

October 2025

- **Winner in Art & Technology category** at NASA Space Apps Challenge 2025, Amaravati Local Event hosted by VIT-AP University. Awarded Winner Trophy by **Sireesh Pallikonda, VP Business Development, Skyroot Aerospace & and University appreciation.**

### **4. IIM Calcutta – Maruti Suzuki Nurture Cohort 3, Eastern India Regional Finalist**

July 2025

- Selected among top innovations for the regional round pitch at IIM Calcutta Innovation Park.

### **5. IIM Bangalore – Sustainable Mobility Meetup Invitee**

Feb 2025

- Invited to NSRCEL IIM Bangalore & Alstom's Sustainable Mobility Incubation Program networking event.

### **6. PARTICIPATED IN ISIE INDIA SIEP E-BIKE CHALLENGE COMPETITION**

January 2024

- **Top 6<sup>th</sup> Team out of Total 68 Teams from all over India across various Colleges in LUMINOUS SIEP E-BIKE CHALLENGE 2024**
- Contributed as Innovation & Electrical Systems Engineer for smart Display integration.

## **Extra Curriculum Activities**

- CORE Member of Financial and Logistics Council – **STUDENT ACTIVITY CENTER KL University**
- CLUB Core Member of **KL SPARK & Tesla Automation Club**, Department of Electrical Engineering in KL University.

## **LANGUAGES**

- English (Fluent)
- Hindi (Fluent)
- Telugu (Native)
- Urdu (Native)

## **CERTIFICATIONS**

- ISRO Space Science and Rocket Technology (April/2024)
- AUTODESK FUSION 360 Certified (April/2025)

## **References:**

1. Dr. Narasimha Raju, Director, MDIE, HOD DTI.  
Koneru Lakshmaiah Education Foundation (KL University)  
Email: [narasimharaju\\_eee@kluniversity.in](mailto:narasimharaju_eee@kluniversity.in)
3. Dr. A Pandian, Director, HOD Department of EEE.  
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