

# SHUVANKAR DEBNATH

## AI Engineer | Software Development Engineer

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♥ Kolkata, West Bengal, India

### Professional Summary

Electrical Engineering student and Software & AI Engineer building at the intersection of full-stack development and applied AI — from production-grade MERN applications to computer vision pipelines deployed on real datasets. Experienced in scalable SaaS architecture, Role-Based Access Control, and translating complex AI models into intuitive, production-ready web applications. EE background provides a systems-thinking foundation that directly shapes software architecture and AI pipeline design.

### Skills

**Programming Languages:** Java, Python, JavaScript. **Web Technologies:** HTML5, CSS3, React.js, UI UX. **Backend & Databases:** Node.js, SQL, APIs, MongoDB, System Architecture, RBAC. **AI & APIs:** LLM APIs (Llama, Gemini), YOLO, Model Evaluation, Machine Learning, Deep Learning, Data Annotation, Prompt Engineering, Generative AI. **Tools:** Git, Github, VS Code, Google Colab, Roboflow, Vercel. **Concepts:** System Design, Database Design. **Core Skills:** Arduino, ESP, EV, DSA. **Core Subjects:** Electric & Hybrid Vehicles, Electrical Machines.

### Experience

#### AI Web Developer Intern 🌐

December 2025 – February 2026

SaaS Platform Development at IEMRF (Hybrid)

Tools Used: Cloudflare, MongoDB, React.js, Node.js, RESTful APIs

- Built 10+ RESTful APIs across user management, session handling, and more for ERP and LMS SaaS platforms.
- Designed **MongoDB schemas** and optimized database operations for efficient user session management.
- Architected and deployed scalable AI features for a multi-tenant LMS and ERP platform, maintaining production stability.

### Technical Projects

#### AI-Powered Educational SaaS Platform 🌐 | MERN Stack — [noteloomtest.vercel.app](https://noteloomtest.vercel.app) September 2025 – June 2026

- Developed secure authentication, file management, AI-powered learning tools, and deployed the MERN app on Vercel.
- Designed scalable architecture supporting students, faculty, and administrators via Role-Based Access Control (RBAC).

#### Battery-Constrained MPC for EV 🌐 | React.js, Python — [ev.shuvankar.qzz.io](https://ev.shuvankar.qzz.io)

February 2026 – April 2026

- Simulated and optimized EV efficiency, achieving a 10.5% Battery SoC save in a healthy battery.
- Developed an interactive web dashboard to visualize the behavior and energy efficiency of an EV.

#### Performance of YOLO models for leaf health classification 🌐 | Python

March 2025 – December 2025

- Trained YOLOv11 model achieving **92.3% mAP** on custom plant disease dataset and evaluated with other models.
- Annotated 200+ images using **Roboflow** for object detection pipeline.

### Certifications

- **Fundamental Guide to AI for Professionals** – Udemy
- **Programming Foundations: Algorithms** – LinkedIn

### Languages

- **Bengali** – Fluent (Mother Tongue)
- **English** – Fluent
- **Hindi** – Fluent

### Education

#### B.Tech. Electrical Engineering

2027

Institute of Engineering and Management, Kolkata(Salt Lake)

CGPA (upto 5th Sem): 8.31 / 10

#### Higher Secondary

2023

Naihati Narendra Vidyaniketan - WBCHSE

Grade: B+

#### Secondary

2021

Naihati Narendra Vidyaniketan - WBBSE

Grade: A