

Ashutosh Tiwari

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Education

Vellore Institute of Technology, Vellore, B.Tech in Electrical And Electronics Engineering

Sep 2021 - May 2025

- GPA: 8.98/10

Projects

Clinicbook (Intelligent Clinic Scheduling Application)

 GitHub

- Developed a **REST API-based** clinic appointment platform with **Spring Boot** (backend) and **React.js + Tailwind CSS** (frontend), featuring **JWT authentication**, **role-based access** (Admin, Doctor, Patient), secure **session management**, and a **responsive UI** for real-time appointment availability. Integrated **MySQL** for persistent storage.
- Used **Git/GitHub** for version control and collaboration, and implemented an **automated CI/CD pipeline** with **GitHub Actions** and **Hostinger webhooks** to deploy the React application to a custom domain on every code push or pull request reducing **manual deployment work by 50%** and accelerated release cycles.
- Followed **SOLID design principles** and applied relevant **design patterns** (Factory, Singleton, MVC) to ensure **clean architecture**, **high maintainability**, and a **scalable codebase**, reducing **code duplication by 30%** and improving feature development speed by 20%.
- Applied **security best practices** including **input validation**, **password hashing**, and **HTTPS enforcement**, mitigating vulnerabilities and ensuring data protection for users.
- **Tools Used:** Java, Spring Boot, React.js, MySQL, IntelliJ IDEA, Spring Security, Spring Data JPA, Git, GitHub Actions, Hostinger Webhooks, CI/CD, FTP Deployment

ML Based Fault Detection System for Transmission Lines

 GitHub

- Developed an advanced ML **pipeline** with a **Random Forest Classifier** on the **IEEE Dataport** dataset (**500K+ records**) for high-voltage transmission line fault detection, achieving **96% accuracy**.
- Applied extensive **preprocessing** (noise removal, normalization, dimensionality reduction), **feature engineering**, and **hyperparameter tuning** to ensure robustness and **scalability**.
- **Demonstrated** potential for enhancing grid resilience, reducing maintenance costs, and supporting smart grid and renewable energy integration.
- **Tools Used:** Python, Pandas, Numpy, Matplotlib, Sklearn, Seaborn

Experience

Engineering Intern, Igowise Mobility – Bangalore, India

Aug 2023 – Nov 2023

- Designed and implemented an **embedded control system** for electric vehicles using real-time sensor data and adaptive **algorithms** to regulate speed and steering, enhancing **performance, safety, and reliability**.
- Built with **C/C++**, **RTOS**, and **STM32** for hardware integration, and applied computer vision (**OpenCV, Python**) for environment perception, enabling **autonomous** and adaptive control.
- Accelerated product development by **automating** fault detection, reducing **testing time**, and improving **system stability**. Conducted **EMI analysis** and designed **mitigation strategies** to further enhance reliability.

Skills

- **Languages:** Java, JavaScript (ES6), Python, SQL
- **Backend:** Spring Boot, Spring MVC, Spring Security, Hibernate, REST APIs, Microservices
- **Frontend:** React.js, HTML5, Bootstrap, Tailwind CSS
- **DevOps/Tools:** Git, GitHub, Maven, IntelliJ IDEA, Postman, Linux, Docker, AWS
- **Databases:** MySQL, PostgreSQL, MongoDB, OracleSQL

Profiles & Courses

- **Coding profiles:** Hackerrank, LeetCode, Geeksforgeeks
- **Others:** Portfolio, Github
- **Courses & Certifications:** Java Spring Framework 6 with Spring Boot 3 by Telusko - Udemy, Jan 2024, Complete Linux Training by Imran Afzal - Udemy, Nov 2024, Supervised Machine Learning by Andrew Ng - Coursera, Mar 2023, Software Engineer, Problem Solving - Hackerrank 2025