Frank Mathew Sajan

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Education

Vellore Institute of Technology, Amaravati Expected May 2027

- Bachelor of Technology in Computer Science | 8.68 (out of 10.00) CGPA
- **Relevant Coursework:** Design and Analysis of Algorithms, DBMS, Computer Networks, Object-Oriented Programming System, Deep Learning.

Technical Skills

Programming Languages: Python, Java, JavaScript (ES6+), SQL.

Web & App Development: React + Vite.js, Django, REST APIs, React Native(Expo).

Databases & Cloud: MySQL, Supabase, AWS, Firebase.

Software Engineering Tools: Version Control with Git, CI/CD, Linux/Bash.

Embedded Systems: Arduino, Raspberry Pi, Real-time Data Processing.

Experience

Software Engineer Intern, IIEC VIT-AP, Amaravati Aug 2023 – Present

- Developed a mobile application using Expo Framework for an autonomous agricultural drone, optimizing seed-planting paths and reducing fertilizer waste through route optimization.
- Built a real-time sensor data processing system (thermal/IR/gas detection) to detect industrial hazard scenarios, to be deployed in low-connectivity environments.
- Designed and tested a communication module using LoRa, ensuring optimal uptime for safety systems in manufacturing-like environments.
- Collaborated on a plant anomaly detection model, deployed it on an AWS EC2 instance, and made it accessible via an API, thereby reducing the need for edge computing.

Projects

School Management System (Supabase, AWS) `Live Demo`

- Deployed a system for a rural school in Agra, **reducing administrative tasks and increasing digital adoption**.
- Optimized database queries (SQLite), cutting page load times by 35%.
- **Developed, tested, and deployed** a full-stack application using React (frontend), Supabase (backend), and Firebase Hosting, ensuring 99.9% uptime during peak usage.

Hazard Detection & Communication Module (Smart Helmet)

- Developed a real-time monitoring system with **modular software architecture**, enabling scalability for industrial environments.
- Engineered conflict-resolution logic to handle sensor data disputes, reducing false alerts.

Achievements

- **NASA Space Apps Challenge 2024 Global Nominee** (Top 1% of 93,520+ participants)

  Developed an AI-driven educational platform to simplify PACE satellite data analysis, improving ocean literacy for students. - Collaborated in a 4-member team under time constraints, aligning with industrial project workflows. [Results]

- **1st Prize, HackAP Hackathon**

  Engineered a hazard detection system with modular software for industrial environments, reducing false alerts using sensor dispute-resolution algorithms.