

# Sajjad Ahmed Shaaz

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## EDUCATION

### Jadavpur University

*B.E. Computer Science* **CGPA: 8.95**  
• Mechatronics Club (JUMTC), IEEE Tech Team

Kolkata, India  
Aug 2024 – Present

## EXPERIENCE

### Aarish Technologies

*AI & Android Systems Intern*

- Leading end-to-end design and development of **HawkEye** — a full-stack drone communication system spanning an Android onboard module, a Node.js/Python backend, and a browser-based ground control dashboard, connected over a cellular VPN tunnel.
- Architected the Android software stack: MAVLink telemetry over USB-OTG to Pixhawk, dual-SIM health monitoring with automatic failover, adaptive video streaming (720p/480p/SMS-only tiers), and background sensor fusion as foreground services.
- Built a CNN-based positioning fallback — takes raw IMU inputs (gyro, accel, baro), predicts velocity vectors ( $v_x, v_y, v_z$ ), and dead-reckons GPS coordinates — enabling navigation continuity under GPS jamming.
- Delivered a real-time browser dashboard (React + WebSockets): live video panel, interactive mission map, telemetry HUD, network health panel, and full drone control with one-confirmation safety gate.

Kolkata, India

Jan 2026 – Present

### CMATER Lab, Jadavpur University

*Undergraduate Research Assistant*

- Co-authored a paper (under review): *Wilson-Prime Channel Attention and Gini-Adaptive Dual-Backbone Fusion for Medical Image Classification* — dual-backbone deep learning architecture evaluated on LC25000, BreakHis, and PneumoniaMNIST.

Kolkata, India

Oct 2025 – Present

### Websoft IOT

*IoT Developer Intern*

- Built an IoT system for Govt. of West Bengal (Dept. of Fisheries) to capture real-time fish weight from field machines and wirelessly transmit data to a central server.

Kolkata, India

Feb 2025 – May 2025

## PROJECTS

### ArDine – AI Restaurant Management Platform | Next.js, Django, PostgreSQL, ChromaDB, Groq API, RAG

- Technical co-founder. Restaurants digitise their menus; diners get a per-restaurant AI chatbot for personalised dish recommendations — open-source LLM (via Groq API) interprets user query and intent, ranks dishes via cosine similarity over per-dish ChromaDB embeddings.
- Full stack: Next.js frontend, Django + PostgreSQL backend, per-restaurant ChromaDB vector collections, restaurant management dashboard. Live at ardine.food.

### BusKaro – Real-Time Public Transit App | React Native, Firebase Realtime DB, Google Maps API

- Mobile app for Kolkata's untracked bus network: live GPS tracking with ETA, digital smart ticketing (pre-purchase + time-activated), AI-assisted route planning, and crowd monitoring. Validated with 255-response user survey and on-ground operator interviews.
- Designed gamified engagement layer (Route Rally daily game, leaderboards, ride vouchers); built working prototype and presented to operators and investors.

### Vendor Management System – B2B Web App | React, Django, Docker, PostgreSQL, Razorpay

- Multi-tenant B2B platform for vendor and order automation: catalog management, automated purchase orders, invoicing, and returns workflows. Razorpay integration for payment disbursement; Docker-containerised for tenant isolation.

### CheatCode – Coding Practice Platform | React, Django, Docker, WebSockets

- LeetCode-style platform with isolated Docker containers and real-time Linux terminals over WebSockets; adaptive learning paths adjust to user performance with no shared session state.

## SKILLS

**Languages:** Python, C, C++, Java, JavaScript

**AI / ML:** PyTorch, TensorFlow, HuggingFace Transformers, scikit-learn, OpenCV, NumPy

**Backend & Infra:** Node.js, FastAPI, Django, Flask, PostgreSQL, Prisma, Docker, WebSockets, REST

**Frontend:** React.js, Next.js, Tailwind CSS

**Cloud & Tools:** AWS, Firebase, Vercel, Git, MAVLink, Android SDK

## ACHIEVEMENTS

- Comsys Hackathon 2025:** 2nd prize among 200+ teams — deep Face Recognition Challenge.
- Pravega 2025, IISc Bangalore:** 2nd place in national-level robotics competition.
- XavSpark 2025:** 5th among 800+ teams in national business hackathon.
- Nation Building:** Zonal finalist among 1000+ teams in nationwide technology Case Study Competition.