Anish Sarkar

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Education

Techno Main Salt Lake *Nov 2022 – Present*
Bachelor of Technology, Information Technology

Experience

React Development Intern *India*
AppYard Infotech *Nov 2025 – Present*

- Building production-ready mobile apps using React Native and scalable backend services with Node.js.

Research Intern (Research Paper) *Kolkata, WB*
IEEE Computational Intelligence Society *June 2025 – July 2025*

- Studied and applied **Genetic Algorithms (GAs)** for ligand–protein energy optimization, implemented and open-sourced a TSPLIB-validated NBGA solution, and presented its algorithmic design and results in a technical talk. (Source Code)

Open Source Contributions

SurfSense *Source Code*

- Integrated **Blocknote rich-text editor** with custom slash commands
- Built **Elasticsearch connector** enabling scalable full-text search across browsing history with **sub-200ms query times**
- Resolved **3+ critical bugs** improving application stability and user experience across the RAG pipeline

Projects

Smart India Hackathon 2024 (a 36-hour Hackathon) *Source Code*

- **Won 2nd place among 500+ teams** with 5 peers in Punjab, developed a mentorship platform serving **1000+ potential users**
- Built mentor-mentee matching algorithms using **cosine similarity** achieving **92% compatibility accuracy**, real-time scheduling handling **50+ concurrent sessions**, and AI-driven career guidance
- Tech Stack: React.js, Tailwind CSS, Flask, Python, Firebase, Cal.com API, OpenAI API, WebRTC, Docker

Farmalyze: Smart Agriculture System *Live Demo*

- Implemented 3 ML models for crop recommendation, fertilizer suggestion, and plant disease detection with **89.1%+ accuracy** using **90,100+ combined samples** from Kaggle crop dataset (2,200 samples), fertilizer dataset (23 crops), and plant disease dataset (87,900 RGB images)
- **Reduced crop failure prediction time by 78.6%** through automated analysis of 7 key agricultural features
- Tech Stack: Python, React.js, Flask, ML (scikit-learn, TensorFlow, PyTorch), SQLite, OpenWeatherMap API

Loopr: Cron-Job Application *Live Demo*

- A distributed uptime monitoring platform that processes **webhooks** and **100+ URLs per worker node** with **5-minute to 24-hour ping intervals**, **4-shard result distribution** and 30-second auto-refresh updates
- Features **dynamic load balancing** across **5+ worker nodes**, **batch processing of 350-400 URLs and webhooks**, and Svelte dashboard with real-time status updates and 100-entry history retention
- Tech Stack: Svelte, SvelteKit, Appwrite BaaS, Docker

Real-Time Video Calling Application *Source Code*

- Developed a **real-time 1:1 video calling platform** using **WebRTC** for peer-to-peer streaming and **Spring Boot** for signaling.
- Implemented **room-based connections** and **secure SSL/HTTPS** with deployment via **Docker** and **Nginx**.
- Tech Stack: Spring Boot, Svelte, WebRTC, Docker, Nginx

Technologies

Languages: Python, Java, JavaScript, SQL (MySQL, PostgreSQL, SQLite), HTML, CSS

Frameworks & Libraries: Flask, Django, Spring Boot, Svelte, TensorFlow, PyTorch, scikit-learn, React, Node.js

Tools & Technologies: Docker, Git, UNIX, Bash, AWS