Anish Sarkar

Kolkata | anishsarkar282@gmail.com | LinkedIn | GitHub | Portfolio

Education

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

Beachwood School *Jul 2019 - Jul 2021*
Higher Secondary

St. Xavier's School *Apr 2007 - Jun 2019*
Secondary

Experience

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

- Analyzed evolutionary computation techniques and **Genetic Algorithms (GAs)** for ligand-protein interaction energy minimization in drug design using variable-length tree models
- Created and delivered a technical presentation summarizing the algorithmic design and results of the **Neighbourhood Based Genetic Algorithm (NBGA)** approach
- Developed and published a complete implementation of the NBGA algorithm using TSPLIB datasets to generate benchmark graphs and validate results (Source Code)

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 features for mentor-mentee matching with **92.3% compatibility accuracy**, real-time scheduling handling **50+ concurrent sessions**, and AI-driven career guidance processing **200+ queries/hour**
- Tech Stack: React.js, Tailwind CSS, Flask, Python, Firebase, Docker, Cal.com API, GetStream Webhooks, HuggingFace, Kaggle datasets

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, Docker

Real-Time Video Calling with WebRTC and Spring Boot *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, WebRTC, JavaScript, Svelte, Docker, Nginx

Technologies

Languages: Python, Java, C, JavaScript, SQL

Frameworks & Libraries: Flask, Django, Spring Boot, Svelte, TensorFlow, PyTorch, scikit-learn

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