Subhradip Nandi

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Portfolio
github.com/codingplugin
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I am a passionate learner, always curious about new technologies. My interests lie in Software Development, Machine Learning, Artificial Intelligence, and Generative AI. I possess a strong foundation in Computer Science core concepts including DSA, Algorithms, DBMS, and OS. I have developed various projects in Web and Android Development, as well as ML/DL, driven by self-directed learning. I have also gained practical experience through internships at reputed institutions.

EDUCATION

B.Tech in Computer Science and Engineering	**2022 – Present**
North Eastern Regional Institute of Science and Technology (NERIST)	*CGPA: 8.16/10*
**Higher Secondary (CBSE)	Secondary (TBSE)**	**2022	2020**
Shishu Bihar HS School, Agartala	*86.8%	88.8%*

SKILLS

Programming	Python, C++, SQL, JavaScript
Machine Learning	Deep Learning (CNNs, ResNet), Knowledge Distillation, Feature Engineering, Model Optimization
Computer Vision	Face Recognition, Image Processing, Landmark-based Recognition
Web Development	Django, Django REST Framework, React.js, REST APIs
Databases	PostgreSQL, SQLite, MongoDB
Systems & Tools	Git, Linux, WebSockets, Cloud Deployment (Render)

PROJECTS   GitHub

Machine Learning Projects

Swarm-based Node Localization in IoT WSNs [Link]
- **Description:** Designed and simulated meta-heuristic algorithms (Aquila, Dung Beetle, COVID-19 Optimizer) to solve Node Localization problems in Wireless Sensor Networks. Developed hybrid models using XGBoost to predict initial node positions, significantly reducing localization error and computational time across varying node densities.
- **Tech Stack:** Python, Scikit-learn, XGBoost, NumPy, Matplotlib, TQDM

Lightweight Satellite Air Quality Forecasting [Link]
- **Description:** Developed an automated pipeline to process high-resolution satellite imagery (TIFF) for air pollutants (NO2, SO2, CO, O3, CH4). Implemented scripts to convert geospatial data into NetCDF/CSV formats, calculate Air Quality Index (AQI), and generate heatmap visualizations for environmental monitoring.
- **Tech Stack:** Python, Google Earth Engine, NetCDF4, Rasterio, Pandas, Matplotlib, NumPy

Web Development Projects

ServiceConnect [Link]
- **Description:** Developed a full-stack marketplace connecting local service providers with customers, featuring Role-Based Access Control (RBAC), a dynamic Booking System, and a scalable REST API for external data consumption.
- **Tech Stack:** Django, Django REST Framework, PostgreSQL, HTML5/CSS3, Git, Render

Personal Portfolio [Link]
- **Description:** Developed a gamified 3D portfolio featuring an immersive asteroid defense mini-game and satellite-based navigation for showcasing professional work.
- **Tech Stack:** React.js, Three.js, Framer Motion, Vite, CSS3

AI-Image Sharing Platform [Link]
- **Description:** Developed AI Face Share, a web application automating photo tagging and sharing using custom face recognition models with personalized training and real-time chat.
- **Tech Stack:** Python, Flask, OpenCV, TensorFlow, SQLAlchemy, HTML, CSS, JavaScript

VoiceFlow [Link]
- **Description:** Developed a privacy-first audio application for real-time transcription and speech synthesis using WebSockets and Deepgram API with cross-platform deployment.
- **Tech Stack:** React, TypeScript, Tailwind CSS, Tauri (Rust), WebSockets, Deepgram API

INTERNSHIPS

Intern — MNNIT Allahabad [Swarm-based Node Localization in IoT WSNs]	**Jun 2025 – Jul 2025**
Intern — IIT Patna [Lightweight Satellite Air Quality Forecasting via Knowledge Distillation]	**Jan 2025 – Jun 2025**
Intern — Tripura University [Real-time Hand Mudra Recognition]	**Jun 2024 – Jul 2024**