SWASTIDIP MAJI

Kolkata, India

📱 +91-9564226185 | swastidip2004@gmail.com | 🔗 LinkedIn | ⭘ GitHub | 〈/〉 LeetCode

Education

Heritage Institute of Technology   **Kolkata, India**
Bachelor of Technology in Computer Science & Engineering (Data Science) – CGPA: 8.19/10.0   *2023 – 2027*

Technical Skills

Machine Learning & AI: TensorFlow, PyTorch, Scikit-learn, YOLOv11, CNNs, LangChain, RAG, FAISS
Deep Learning & CV: Computer Vision, OpenCV, Object Detection, Transfer Learning, EasyOCR, Tesseract
NLP & LLMs: Google Gemini API, GPT APIs, Document AI, Vector Embeddings
Data Science: Pandas, NumPy, Matplotlib, Feature Engineering, DBSCAN Clustering, Statistical Modeling
Programming: Python, JavaScript, TypeScript, C, SQL, Java
Web & APIs: FastAPI, Streamlit, React.js, Next.js, Express.js, RESTful APIs, WebSocket
DevOps & Tools: Git, GitHub, Docker, Vercel, Postman, VS Code, Jupyter Notebook, CI/CD

Projects

ISRO BAH 2025 – Tropical Cloud Cluster Detection | *Python, CNNs, Next.js, HDF5* | Live GitHub   **Aug 2025**
- Built CNN-based Tropical Cloud Cluster detection system processing 500MB+ HDF5 satellite imagery with 99%+ accuracy
- Architected automated pipeline processing half-hourly INSAT files with real-time monitoring and CSV/JSON exports
- Deployed Next.js dashboard on Vercel with side-by-side visualization, geospatial mapping, and temporal filtering UI

MedXpress – Healthcare SaaS Platform | *React, Express, Gemini AI, PostgreSQL* | Live   **Nov 2025**
- Developed end-to-end healthcare SaaS with appointment booking, medication ordering, and AI-powered health insights
- Architected REST API handling 40+ endpoints for appointments, medications, lab reports, and AI health recommendations
- Implemented advanced medication catalog search with fuzzy matching, synonym expansion, and caching for < 100ms response

Legal-Eagle-Ultimate – Multi-Agent AI Legal Assistant | *Python, Gemini-2, RAG, NLP* | Live GitHub   **Sep 2025**
- Engineered multi-agent orchestration coordinating 5 specialized Gemini-2 agents for risk assessment and compliance checks
- Implemented InLegalBERT fine-tuned NER pipeline for Indian statute recognition with section/act retrieval across 1872+ provisions
- Architected document processing combining pdfplumber, Google Document AI OCR, and RAG vector embeddings for advice generation

Roadguard-MVP – Computer Vision Road Safety System | *YOLOv11n, OpenCV, DBSCAN* | Live GitHub   **Oct 2025**
- Trained YOLOv11n on 6,439 images achieving 50.3% mAP@0.5; deployed with 45ms inference and 22 FPS video processing
- Built GDPR-compliant privacy pipeline with OpenCV face/plate anonymization, batch processing 100+ images with verification
- Implemented DBSCAN clustering (10m radius) with SQLite for hazard deduplication, reducing false alarms by 90% via Folium maps

Market-Shield – Multi-Channel Fraud Detection | *Python, FAISS, Gemini, OCR* | Live GitHub   **Sep 2025**
- Built multi-channel fraud detection ingesting URLs, PDFs, images, and videos; implemented EasyOCR + Tesseract with OpenCV verification
- Developed RAG architecture using FAISS vector search with Gemini embeddings for real-time SEBI policy retrieval
- Deployed risk scoring engine detecting pump-and-dump, guarantee claims; integrated caching, rate limiting, and audit trails

Achievements & Leadership

ISRO Bharatiya Antariksh Hackathon (BAH) 2025 – National Finalist | Certificate   **2025**
- Selected among top 50 teams from 8000+ nationwide entries for ML-powered satellite data processing innovation
- Pitched AI-driven geospatial analytics platform to ISRO scientists and space technology industry leaders
- Collaborated with cross-functional team using Agile sprints and Git workflows for rapid ML model deployment

Swami Vivekananda Merit-Cum-Means Scholarship   **2023 – Present**
- Awarded competitive merit-based West Bengal Government scholarship (Top 10%) for 3 consecutive years, recognizing sustained academic excellence and performance

Open Source AI/ML Contributions & Technical Leadership   **2023 – Present**
- Built 5 open-source AI/ML applications with CNN-based cloud detection (ISRO-BAH-2025), YOLOv11n object detection (RoadGuard), FAISS semantic search (MarketShield), and RAG systems (Legal-Eagle), all deployed with live demos and comprehensive documentation
- Architected production ML pipelines using TensorFlow, OpenCV, FAISS, and Gemini API integrations, with Next.js/Streamlit frontends and automated processing workflows across Python/TypeScript codebases