ADRITEYO DAS

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EDUCATION

Manipal Institute of Technology, Manipal, Karnataka 2023 – 2027
Bachelor of Technology — Computer and Communication Engineering
CGPA: 9.46 *(Top 3 in ICT Department)*

SKILLS

Languages	Python, C/C++, Java, JavaScript, SQL, Bash, HTML/CSS, LaTeX
Frameworks	PyTorch, Hugging Face Transformers, Flask, React.js, OpenCV, OpenLayers, Docker, WebSockets
AI/ML	Computer Vision, NLP, GANs, XGBoost, BERT, CNNs, Transfer Learning, Feature Engineering, Adversarial ML
Tools	Git, MySQL, Redis, JWT, Prophet, Streamlit, CUDA, PyTorch AMP, REST APIs, Volatility, Wireshark, IDA

ACHIEVEMENTS

- **1st Position:** EnigmaXplore 2024 CTF (IIIT Naya Raipur), BITSCTF 2024 (BITS Goa), CruXipher 2024 (BITS Hyderabad), KashiCTF 2025 (IIT BHU Varanasi).
- **Awarded Acheiver's Scholarship** by Manipal Institute of Technology for academic performance

EXPERIENCE

Undergraduate Research Assistant *July 2024 – Present*
Manipal Institute of Technology *Manipal, Karnataka, India · On-site*

- Working with **Dr. Nisha P. Shetty** on explainable AI, multimodal learning, and cross-lingual NLP.
- **First-author paper** in **Frontiers in AI** on explainable multimodal disease classification using **attention-based image-text fusion** (**98% accuracy**) with Grad-CAM and Integrated-Gradients.
- Research on **criminal intent detection in social media text** via **DistilBERT/Electra fine-tuning**, **FastText**, and hybrid features within a **PCC + ACO** optimized ensemble; achieved **ROC-AUC: 0.9618** (manuscript under preparation).

Research & Development Head *January 2024 – Present*
Cryptonite (Rank #2 India on CTFtime) *Manipal, Karnataka, India · On-site*

- Leading **AI–Cybersecurity research**, including **audio profanity detection** and **privacy-preserving OSN graph generation**.
- Mentoring juniors on **adversarial ML, neural network security**, and **AI-driven threat detection**.
- Active member in national/international CTFs, specializing in **Digital Forensics** and **Network Security** challenges.

PROJECTS

- **SimuTrade: Real-Time Stock Market Trading Simulator** *July 2025*
  React.js, Flask, MySQL, JWT, Prophet, yFinance, REST APIs, Docker
  - Built full-stack trading simulator with **JWT-based authentication**, secure role separation (RBAC), and modular backend architecture.
  - Integrated **real stock data using yFinance API** with **Prophet forecasting models** for predictive trend analytics.
  - Implemented **custom caching layer** to reduce external API calls and improve performance.
  - Developed **portfolio tracking**, PnL computation, and a dynamic **community shop** with gamified rewards and scoring system.
  - Built learning center with curated **financial literacy content**, and **leaderboard system** based on wealth and community engagement.
  - Deployed using **Docker**, tested and documented all routes with Postman, and architected for frontend-backend separation.
- **GAN-based Damaged Camera Image Reconstruction System** *December 2023*
  PyTorch, GANs, Computer Vision, Adversarial Training, Perceptual Loss
  - Trained advanced GAN architecture with **adversarial + perceptual + pixel-wise loss functions** for restoring corrupted driving scenes.
  - Achieved high **PSNR/SSIM scores** on test datasets using **U-Net generator** and **PatchGAN discriminator**.
  - Deployed production-ready **Streamlit UI** with **real-time inference** and batch processing capabilities.
- **DropLAN: Local Network File & Note Sharing Platform** *July 2025*
  Flask, WebSockets, React/Vite, Docker, File I/O, Socket.IO, LocalStorage, SHA-256
  - Built full-stack LAN-based sharing tool for **real-time two-way transfer of files and notes** between devices on the same network.
  - Implemented **temporary Buckets with 30-min expiry**, hashed uploads (SHA-256), and live sync using **WebSockets via Socket.IO**.
  - Added **QR-based portal access**, automatic IP detection, and persistent notepad using **localStorage autosave**.
  - Deployed with a custom CLI command `DropLAN` for 1-click browser launch; designed with a **minimalist monospace UI and animations** and runs via Docker.

PUBLICATIONS

- **Das, A.**, Shetty, N. P., et al. (2025). **Explainable multimodal deep learning framework for skin cancer detection using clinical and dermoscopic images**. *Frontiers in Artificial Intelligence*, 8, 1608837. DOI: 10.3389/frai.2025.1608837

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