

Aman Githala

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Education

Faculty of Technology, University of Delhi
B.Tech in Computer Science & Engineering

Delhi, India
Aug 2024 – May 2028 (Expected)

Research Experience

Research Scholar (Coursework-Based Research)

Aug 2025 – Present

Faculty of Technology, University of Delhi
Advisor: Assistant Prof. Shivani Kumari

- Conducting coursework-based research on **federated learning for medical image analysis** using chest X-ray data.
- Developed a **federated learning pipeline** with **DenseNet-121** on the **NIH ChestX-ray14 dataset** (~45 GB).
- Simulated **non-IID client data distributions** to model hospital-specific pathology skew.
- Achieved **93% accuracy** on centralized baselines and evaluated performance against **FedAvg** under heterogeneity.
- Co-authoring a research manuscript describing methodology and empirical results (*in progress*).

Technical Projects

Full-Stack Containerized LLM Application

Python, Flan-T5, Node.js, Docker

- Built an end-to-end sentiment analysis system served via a REST API and containerized for reproducible deployment.
- Evaluated on labeled sentiment data, achieving approximately **90% accuracy**.

Ultra-Low-Bandwidth BLE Mesh Network

Flutter, Dart, Bluetooth Low Energy (BLE)

- Designed an internet-independent P2P communication system for disaster response using BLE.
- Reduced packet size by **65%** (36B → 13B) via custom compression and hash-based deduplication.

Technical Skills

- Languages:** Python, C/C++, Dart, JavaScript
- Machine Learning:** PyTorch, Tensorflow, Pandas, CNNs, Transfer Learning, Federated Learning (FedAvg)
- Tools:** Docker, Git, GitHub, VS Code, Android Studio

Competitive Programming

- LeetCode:** Max Rating **1751** (Top 10%); Rank **619** / ~28k in Weekly Contest 475
- Codeforces:** Max Rating **1349**; Rank **789** / ~30k (Round 1043)

Leadership

- Team Lead, Smart India Hackathon 2025:** Led a 6-member team; top internal rank among 100+ teams.
- Captain, Inter-College Chess Team:** Led team to four consecutive wins; won all individual matches.