Ishaan Gupta

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EXPERIENCE

Summer Intern (Data Science)

Reserve Bank of India **June 2026 - August 2026, Mumbai**

- Engineered an end-to-end agricultural intelligence pipeline ingesting government publications from 5+ sources and converting unstructured PDFs/spreadsheets into normalized, linked, queryable datasets.
- Built a hybrid extraction system using Gemma 4 31B, Camelot, and Python, with schema-constrained zero-shot extraction, NDJSON recovery, chunked processing, caching, location repair, deduplication, and auditable source-level provenance.
- Scaled analytics to 1.2M+ records by migrating pandas/CSV workflows to Parquet + DuckDB, enabling efficient SQL-based filtering, joins, and cross-source analysis.
- Developed a dashboard using FastAPI and Next.js for analysis, incorporating incremental data loading for responsive exploration of 1M+ row datasets.

AI Quant Researcher

CiteCert **December 2024 - February 2025, Mumbai**

- Built an LLM-based financial-news analysis pipeline for sentiment classification and information extraction, achieving 94%+ accuracy on evaluated samples.
- Automated ingestion of financial news and market-price data to analyze relationships between news sentiment and subsequent stock-price movements.
- Validated extraction outputs against historical financial datasets to ensure reliability and minimize classification errors.

Software Developer

Swarmauri (USA based startup) **September 2024 - October 2024, Remote**

- Integrated 5+ LLM providers and 4+ vector databases into the production Swarmauri SDK, expanding model and retrieval backend support.
- Implemented and optimized integrations for Pinecone, Weaviate, Redis, and Neo4j, improving vector retrieval and NoSQL functionality.
- Ran 10+ integration tests, resolving critical SDK bugs and reducing codebase size through optimization.

Software Developer Intern

Robofly Technology Pvt Ltd **October 2023 - November 2023, Patna**

- Developed a deep-learning fire detection system, building a multi-source image dataset and achieving 98%+ classification accuracy.
- Evaluated feature-extraction and augmentation strategies across 10,000+ test samples to improve model robustness and generalization.
- Optimized model inference pipelines and documented evaluation metrics to accelerate deployment across staging environments.

PROJECTS

Federated Learning Dual Experts for Multi-Modal 3D Medical Image Segmentation

University of Florida

- Designed a Personalized Federated Learning architecture for 3D CT/MRI multi-organ segmentation using SwinUNETR with a shared encoder and modality-specific latent spaces and expert decoders, after conducting 4 ablations of different parameter-sharing strategies.
- Implemented FedAvg over only the 42.58M-parameter shared encoder while retaining ~102M expert parameters locally across non-IID CT-only, MRI-only, and mixed clients.

GATE-Dehaze: Satellite Image Dehazing using GANs

Turkish Journal of Remote Sensing

- Developed a GAN-based dehazing model from scratch, which uses an ensemble technology, combining outputs of 4 different models into one.
- The 4 models include different variations of transformers and different attention mechanisms to enhance satellite imagery by removing atmospheric distortions.
- Engineered a real-time image mosaicking pipeline using statistical methods for seamless satellite image stitching.

AI Security and Surveillance System

National Rajasthan Police Hackathon

- Developed Algorithms for Traffic Violations Detection as vehicles running red lights and identifying their license plates for law enforcement purposes, as well as identifying non- helmet-wearing motorcyclists for traffic safety enforcement.
- Implemented a border patrol security solution integrating drone detection technology and facial recognition to identify and track potential intruders, with a specialized feature for recognizing Indian Army personnel to ensure border security.

EDUCATION

M.S. in Computer Science

University of Florida • Gainesville, FL • 2027 • 3.88/4.0

• GPA: 3.88/4.0.

B.Tech in Artificial Intelligence and Machine Learning

University of Mumbai • Mumbai, India • 2025 • 9.47/10

• CGPA: 9.47/10.

PUBLICATIONS

GATE-Dehaze: Satellite Image Dehazing using GANs

paper • Turkish Journal of Remote Sensing • 2026

SKILLS

Languages: Python, Java, SQL

ML/AI: PyTorch, Machine Learning, Deep Learning, LLMs, NLP, Computer Vision, Federated Learning

Web & Backend: React, Next.js, FastAPI, REST APIs, MongoDB, PostgreSQL, SQLite

Data/Big Data: PySpark, Apache Spark, Pandas, DuckDB, Parquet, Redis, Neo4j