

Shruti Verma

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Summary

AI & Data Science final-year engineer specializing in production LLM systems, document intelligence, and knowledge graphs. Proven track record shipping research-grade AI at scale — **94%+ extraction accuracy** on Railway accident reports, **L&T CreaTech National Finalist** (Top 8 of 15,000+ teams), and **200+ production users** across deployed platforms. Strong foundation in GPU-accelerated ML, agentic pipelines, and full-stack deployment.

Education

Gati Shakti Vishwavidyalaya, Vadodara, Gujarat Aug 2023 – May 2027
B.Tech in AI & Data Science (Railway Specialization) **CGPA: 9.58/10.0**
GeeksforGeeks Institutional Rank #2 · State Topper (Class X & XII)

Experience

Ministry of Railways May 2025 – Present

AI Research & Development Intern

- Architected end-to-end document intelligence pipeline for Indian Railway accident reports using dual-GPU OCR (PaddleOCR), DocLayout, and 5-pass agentic LLM extraction; achieved **94%+ accuracy** on unstructured damage/casualty/findings fields, processing 150-page reports in **under 8 minutes** on RTX 4500 Ada + CUDA 12.1.
- Conducted comprehensive **EDA** on 150+ historical accident reports across **All Railway zones** — identified temporal trends, cause clusters, and damage correlations; findings compiled into structured research reports submitted to Railway Safety Board.
- Built Pydantic validation framework with rupee-amount cross-validation and confidence flags; all AI pipeline results and EDA insights delivered as internal research documentation.

Indian Railways Institute of Disaster Management (IRIDM) May – July 2025

Web & AI Development Intern

- Built full-stack disaster management platform (React, Node.js, PostgreSQL) for institutional emergency response operations.
- Integrated LangChain + FAISS vector retrieval chatbot achieving **94% answer relevance** on 500+ policy documents; deployed Groq API for **sub-200ms** inference on production network.

Projects

FormOptiX: Intelligent Formwork & BoQ Optimizer *Python, PuLP, scikit-learn, Streamlit*

L&T CreaTech '26 National Finalist — Top 8 of 15,000+ teams

- DBSCAN clustering for floor similarity + LP-based procurement optimizer delivering **15.3% cost reduction** vs zero-reuse baseline; **97% BoQ accuracy**; advancing to production with L&T Infratech.

GraphRAG: Knowledge Graph + LLM Policy Intelligence *PyTorch, HuggingFace, FAISS, FastAPI, Next.js*

- Production RAG combining knowledge graphs with fine-tuned Mistral 7B over 4,000+ entities; multi-hop reasoning with **<200ms latency**; conformal prediction for uncertainty and SHAP explainability on every response.

AI Resume Intelligence System *React, FastAPI, OpenRouter, LangChain*

- ATS scoring + bullet rewriting + GitHub integration; **150+ beta users**, **92% ATS match improvement**, **4.8/5** satisfaction; deployed on Vercel + Railway.

RetentionAI: Churn Prediction Platform *FastAPI, XGBoost, SHAP, BERT, LangChain*

- Churn prediction for Indian BFSI sector: **AUC 0.91** + SHAP explainability + BERT emotion detection; digital twin simulation for intervention impact analysis with LangChain 4-module outreach generation.

AI Interview Preparation Platform *Next.js, FastAPI, Whisper API, DBSCAN, PostgreSQL*

- Full-stack DSA mock interview platform with DBSCAN-powered problem recommendations and Whisper-based speech feedback; **85% week-over-week retention**.

Adaptive Multi-Agent Logistics Orchestration *PyTorch, GNN, Reinforcement Learning, Transformers*

- End-to-end ML logistics: TFT forecasting + GNN routing + Transformer maintenance prediction + QMIX multi-agent RL; **10× faster routing** vs OR-Tools with uncertainty-aware dispatch.

Technical Skills

Languages:	Python, JavaScript, C++, SQL
AI/ML:	PyTorch, TensorFlow, HuggingFace, XGBoost, scikit-learn, LangChain, FAISS
LLM & RAG:	Fine-tuning (LoRA/QLoRA), Ollama, OpenRouter, Groq, GPT-4, Mistral
Computer Vision:	PaddleOCR, YOLO, DocLayout-YOLO, OpenCV
Web & DevOps:	React, Next.js, FastAPI, Flask, PostgreSQL, Docker, CUDA 12.1, AWS
Data Science:	Pandas, NumPy, SHAP, Conformal Prediction, Tableau

Achievements & Certifications

- L&T CreaTech '26 National Finalist** - Top 8 out of 15,000+ teams (FormOptiX)
- GFG Institutional Rank #2** · CGPA 9.58/10.0 · State Topper in Class X & XII
- Certifications:** NVIDIA Applications of AI for Predictive Maintenance · Microsoft Azure Fundamentals · Deloitte Data Analytics