

Ankit Raj

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EDUCATION

2027	Indian Institute of Technology, Roorkee	CGPA: 8.02
2022	Krishna Public School, CBSE (Class XII)	92.4%

INTERNSHIP

Analyst Intern — IIT Roorkee May 2024 – Nov 2024

- Built Python–SQL pipelines processing 25K+ daily records, reducing manual effort by 80%.
- Designed LSTM and regression models (87% accuracy) for real-time forecasting and Power BI dashboards.
- Integrated GenAI frameworks (LangChain, LangGraph, Gemini) for anomaly detection and automated reporting.

PROJECTS

MLOps Pipeline for Vehicle Insurance Cross-Sell Prediction

- Built end-to-end MLOps pipeline predicting customer interest in vehicle insurance using 12 features.
- Implemented automated CI/CD with GitHub Actions, Docker, AWS ECR, and EC2 for model deployment.
- Deployed FastAPI service with S3 model registry, MongoDB Atlas, and schema-driven data validation.

AgentX – Generative AI Workspace — Live Demo

- Built GenAI workspace using LangGraph for multi-step LLM reasoning, tool orchestration, and agent workflows.
- Implemented tool-augmented generation enabling dynamic invocation of MCP-based tools for file operations.
- Developed FastAPI backend with JWT authentication, MongoDB conversation memory, and multimodal.

TinyLLM – End-to-End Training & Alignment of Small Decoder-Only LM

- Built TinyLLM with WordPiece, RoPE, GQA attention, and pre-LayerNorm in a decoder-only GPT model.
- Trained with mixed-precision next-token LM using AdamW + warmup for efficient single-GPU optimization.
- Added instruction tuning and preference ranking alignment instead of RLHF to refine model behavior.

Credit Card Score Modeling via Classification & Risk Techniques

- Built a predictive score using XGBoost on 30,000+ records, addressing imbalance via SMOTE.
- Achieved F2-score of 0.603, identifying 84% of defaulters for early warning and loss mitigation.
- Created 8 financial features and tuned threshold aligned with the bank's risk policy.

Market Capitalization Forecasting with Deep Learning

- Built forecasting models to predict firm-level market capitalization across 1–3 year horizons.
- Developed LSTM, MLP, and Encoder–Decoder architectures on 25 years of historical market data.
- Applied PCA on 28 indicators to reduce dimensionality and improve model generalization.

SKILLS

Languages & Tools: Python, R, SQL, scikit-learn, TensorFlow, Generative AI, Statistics, Pandas, FastAPI

POSITION OF RESPONSIBILITY

Web-D Joint Secretary — Team Wellness, IIT Roorkee Jul 2024 – May 2025

- Managed and maintained the Wellness Centre website ensuring seamless user experience and timely content.
- Enhanced UI responsiveness, backend security, and accessibility through structured optimization.
- Conducted periodic audits and implemented data integrity measures for consistent reliability.