Ritankar **Mondal** | CH23B105

Summary

AI/ML engineer skilled in LLM deployment, RAG pipelines, and model fine-tuning (LoRA, PEFT). Builds scalable, low-latency ML systems with real-world impact. Focused on ML infra, applied research, and AI-first product teams.

Education

B.Tech in Chemical Engineering	Indian Institute of Technology Madras	7.58	2023–2027
XII (CBSE)	Hem Sheela Model School	91%	2023
X (CBSE)	Hem Sheela Model School	98.4%	2021

Achievements

- Secured 98.61 percentile in JEE Mains (NTA) among 1.2M+ candidates nationwide.
- Ranked 447 (GMR) out of 130,000+ in WBJEE, West Bengal's premier engineering exam.
- Achieved AIR 71 (Junior Squad) and City Topper in Technothlon Prelims '20 by IIT Guwahati.

Relevant Coursework

- LLM Fine-Tuning & Optimization
- Deep Learning Specialization* (Andrew Ng)
- Large Language Models (Hugging Face)
- Machine Learning Techniques
- Applied Deep Learning (Udemy)
- Data Structures & Algorithms*
- AI Agents (Hugging Face)
- Intermediate Machine Learning
- Full-Stack Development (React, Node.js)

Technical Skills

ML & LLM Frameworks	PyTorch, TensorFlow, Hugging Face, LangChain, LoRA, PEFT, RAG Pipelines
Dev Tools & Languages	Python, C++, JavaScript, Git, Bash, Linux
Web & Infra Tools	React, FastAPI, Node.js, PostgreSQL, Tailwind, Docker, REST APIs, Hugging Face Inference, CI/CD
Data & Visualization	NumPy, Pandas, Matplotlib, Seaborn, Streamlit, BeautifulSoup

Projects

R.E.A.C.H. — Emergency Response App ↗ *IITM Nirmaan '25 Cohort*

CO-FOUNDER & FULL-STACK LEAD *Apr. 2025 – Present*

- Selected among top 60 of 200+ startups for IIT Madras NIRMAAN Summer 2025 cohort after evaluation of concept note, pitch deck, and roadmap.
- Building AI-powered emergency response platform; prototype integrates Google Maps + simulated 112 tracking.
- Developing full-stack app with React, Next.js, Socket.io; prototyping BART-based call summarizer & spoof detection.
- Leading technical direction in 5-member team; milestone-driven agile sprints for MVP delivery.

MedProQA – Fine-tuned LLM for Medical QA ↗ *Kaggle Project*

SOLO DEVELOPER *Jul. 2025 – Present*

- Fine-tuned Phi-3 with LoRA & PEFT; reduced training cost by 24% and memory by 38% via 4-bit quantization.
- Processed 250K+ QA pairs (MedQA, PubMedQA, MedMCQA) with 92% format alignment.
- Achieved 82.6% accuracy on MedMCQA, outperforming GPT-2 & BioBERT; retrieval filtering cut hallucinations by 28%.

SmartPDF – SmartPDF – AI PDF Insights ↗ *Personal Project*

SOLO DEVELOPER *Jul. 2025 – Present*

- Built full-stack PDF summarization app with FastAPI, React, Docker; integrated LangChain & HuggingFace.
- FAISS + MiniLM embeddings achieved 96.3% semantic alignment; Falcon compressed docs by 82%.
- Optimized retrieval to <600ms latency; added RoBERTa QA for real-time document Q&A.

RRT Path Planning for 2D Robot Navigation ↗ *Course Project*

SOLO DEVELOPER *Dec. 2024 – Jan. 2025*

- Implemented 4 RRT variants with collision detection, goal biasing, and path smoothing in Python.
- Simulated dynamic/narrow environments; visualized results with Matplotlib + Streamlit UI.
- Achieved 98% success rate across 1000+ runs; reduced path length 27% & runtime 41% vs baseline RRT.

SmartFan – Brand Sentiment & SoV Tracker ↗ *Personal Project*

SOLO DEVELOPER *Aug. 2024*

- Automated sentiment & Share of Voice (SoV) analysis for 4 fan brands using n8n workflows.
- Integrated SerpAPI, YouTube API, Twitter API, and Gemini Chat model for real-time data ingestion & sentiment scoring.
- Delivered comparative SoV dashboards with pandas/matplotlib, enabling actionable insights across keywords/platforms.

Stock Price Forecasting App ↗ *Personal Project*

SOLO DEVELOPER *Jun. 2024 – Jul. 2024*

- Combined FinBERT sentiment analysis with LSTM time-series forecasting for stock movement prediction.
- Deployed interactive Streamlit dashboard visualizing sentiment trends & forecasts in real time.

Extracurricular Activity

- Edited 5+ IITM TV videos using Premiere Pro; content gained 6K+ views and boosted engagement by 23%.
- Reached out to 200+ alumni founders via Tracxn to secure internships and job leads for the graduating batch.
- Mentored 10+ students via IITM Shiksha Prayas; improved fluency and confidence through weekly sessions.