Jatin Mehra

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PROFILE SUMMARY

AI/ML Engineer with hands-on experience delivering production-grade NLP, Computer Vision, and Predictive Analytics solutions. Kaggle Silver Medalist with a proven record of Top 1%–10% placements. Skilled in LLM fine-tuning (LoRA), MLOps, and driving business growth through data science.

TECHNICAL SKILLS

Languages: Python, C++, SQL
ML/AI: XGBoost, Scikit-learn, LLM Fine-Tuning (LoRA), RAG, VideoMAE, Time-Series, Agents
Frameworks: PyTorch, TensorFlow, Hugging Face, LangChain, FastAPI, Matplotlib
DevOps/Tools: Docker, Git, GCP, Streamlit, FAISS, Excel Analytics

PROFESSIONAL EXPERIENCE

Sales Operations Analyst   Dec 2022 – Present
NB Enterprises (India Today Group)   *Delhi, India*
  – Spearheaded data-driven initiatives to balance supply and demand for magazine distribution across 70+ routes.
  – Built automated reporting workflows using **Python and Pandas**, saving 20 hours of manual work per month.
  – Designed inventory analytics dashboards, significantly improving planning accuracy and logistics efficiency.

SELECTED PROJECTS

Predictive Analytics for Magazine Sales | *Professional Project*   XGBoost, Scikit-learn
  – Trained an XGBoost regressor ($R^2 = 0.77$) to replace intuition-based allocation with data-backed forecasts.
  – Engineered trend, seasonality, and demographic features, achieving **14% YoY sales growth**.
  – Reduced unsold returns by **14%** and improved sales ops efficiency by **15%** via a dynamic dashboard.

Math Misconception Prediction | *Kaggle Silver Medalist (Top 2%)*   NLP, LLMs
  – Built an ensemble of 6 LLMs to classify student reasoning errors, achieving a high-precision score of **0.947 MAP@3**.
  – Fine-tuned models up to 14B parameters using **LoRA, QLoRA**, and full parameter updates on multi-GPU setups.
  – Engineered a custom multi-factor ensemble strategy using probability calibration to ensure logical consistency.

Video Collision Prediction (Nexar Challenge) | *11th Place Global*   Computer Vision, VideoMAE
  – Ranked **11th (0.80 mAP)** in a challenge focused on early accident anticipation using 1,500+ dashcam videos.
  – Fine-tuned **VideoMAE-2 Large** and TimeSformer architectures for binary classification of critical driving events.
  – Implemented a spatiotemporal sampling strategy to predict accidents 1.5s in advance for ADAS applications.

PDF Insight Pro (Agentic RAG System) | *Personal Project*   FastAPI, LangChain, Docker
  – Designed a modular **Agentic RAG** pipeline integrating semantic search with web-augmentation via Tavily API.
  – Achieved an 85.3% "Pass" rate on complex retrieval tasks, tracked via ROUGE-L and Semantic Similarity metrics.
  – Containerized using **Docker** and implemented CI/CD via GitHub Actions for Hugging Face Spaces deployment.

Plagiarism Detection System | *1,700+ HF Downloads*   SmolLM2, Streamlit
  – Fine-tuned a **SmolLM2-135M** model, achieving **96.2% Accuracy** on a test set of 73k+ samples.
  – Deployed an end-to-end Streamlit web app and achieved 1,700+ monthly model downloads on Hugging Face.

EDUCATION

M.Sc. Data Science   2025 – 2027
Chandigarh University   *SGPA: 9.00/10*
BCA (Computer Applications)   2022 – 2025
Chandigarh University   *CGPA: 7.89/10*

ACHIEVEMENTS & CERTIFICATIONS

Kaggle Silver Medalist: Math Misconception Detection (Top 2%); 3x Top 10% finishes in global ML competitions.
Certifications: Building RAG Agents with LLMs (NVIDIA); Agents and Transformers (Hugging Face).