DHRUVRAJ SINGH RATHORE

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AI Engineer with hands-on experience in LLMs, AI agents, ML, and data engineering, skilled in Python, PyTorch, Spark, AWS, and MLOps to develop scalable AI pipelines that reduce manual effort and accelerate product delivery.

EDUCATION

Texas A&M University — College Station, TX
Master of Science in Data Science, College of Engineering, GPA: 4.0 — *August 2024 – December 2025*

SRM Institute of Science and Technology — Chennai, India
Bachelor of Technology in Computer Science, GPA: 3.8 — *July 2018 – May 2022*

SKILLS

Programming & Data Processing: Python, SQL, Pandas, PySpark
ML & AI: Scikit-learn, PyTorch, TensorFlow, RAG, LangChain, CrewAI, LlamaIndex
MLOps & Deployment: Docker, Streamlit, FastAPI, CI/CD (GitHub Actions), MLflow, Kubernetes
Cloud & Databases: AWS (EC2, S3, Lambda, Glue), Relational (PostgreSQL, MySQL), NoSQL (MongoDB, Redis)

WORK EXPERIENCE

AI Engineer Intern — June 2025 – Present
TechSur Solutions — *Reston, Virginia*

- Developed an **AI-driven code-generation pipeline using CrewAI and MCP** that transforms user stories into full-stack applications with integrated testing and documentation, **cutting development time by 70%.**
- Built **self-correcting error fixing agents** that diagnose compilation failures, make code corrections, and re-verify builds, **boosting initial build success rate from 30% to 80%.**
- **Automated unit and functional test generation** for Java microservices using the TestNG and Mockito frameworks, **enabling 90% code coverage** and allowing faster developer feedback cycles.
- Created a **FastAPI-driven automation layer integrating GitHub, JIRA, and Supabase** to streamline AI-based code creation, review, and deployment, **accelerating release cycles by 40%.**

Data Engineer — December 2022 – June 2024
Draup Business Solutions — *Bangalore, India*

- Built **scalable ETL pipelines using Spark on AWS** EMR/Glue to process 50+ TB of structured and semi-structured S3 data, **reducing processing time by 30%** through optimized partitioning and resource utilization.
- **Streamlined daily validation** for 200M+ records using **Airflow DAGs**, enabling a live data-quality dashboard that **dropped QA escalations by 50%** and strengthened client confidence in data accuracy.
- **Collaborated with product and analytics teams** to implement a serverless data pipeline using AWS Lambda, Athena, and DynamoDB for on-demand S3 queries, **accelerating ad-hoc client data delivery time by 50%.**

PROJECTS

HR Smart Screener | **GitHub Link** | *BERT, LLAMA, Streamlit,* — May 2025 – June 2025

- Built an AI-powered resume screening web app using BERT, LLaMA 3.2, and semantic matching with a Streamlit UI, supporting multi-resume uploads and real-time fit scoring, cutting candidate shortlisting time by 60%.

TravelGenie | **GitHub Link** | *Python, REST APIs, BERT, RAG* — March 2025 – May 2025

- Developed an intelligent travel itinerary planner using Python, REST APIs, LLMs, BM25+ embeddings, and RAG to fetch and rank real-time flight, hotel, and attraction data to generate cost-optimized plans in under 30 seconds.

Cotton Field Detector | **GitHub Link** | *Hackathon, Deep Learning, Pytorch* — Nov. 2024 – Dec. 2024

- Implemented a U-Net deep learning model in PyTorch to segment cotton fields from satellite imagery with 92% IoU and 88% accuracy, enabling automated crop mapping and reducing manual inspection effort.

ACHIEVEMENTS

- **Proposed and led development of a Command Center dashboard** to automate client data deliveries, cutting delivery time from an average of 5 hrs to under 1 hr, **helping the team secure 4 new client deals worth $10M** in a single quarter.
- **Awarded 3rd place in a hackathon** hosted by TexasA&M University for developing a deep learning segmentation model for cotton crop field detection.