

# DHRUVRAJ SINGH RATHORE

Austin, Texas | (737)-206-1179 | dhruvrajrathore2011@gmail.com | Portfolio | LinkedIn | GitHub

AI Engineer with 2+ years' experience with LLMs, AI Agents, NLP, ML and data engineering, skilled in Python, PyTorch, Spark, AWS, and MLOps for building scalable AI pipelines that drive automation and business growth.

## EDUCATION

### Texas A&M University

Master of Science in Data Science, College of Engineering, GPA: 4.0

College Station, TX

August 2024 – December 2025

### SRM Institute of Science and Technology

Bachelor of Technology in Computer Science, GPA: 3.8

Chennai, India

July 2018 – May 2022

## WORK EXPERIENCE

### AI Engineer Intern

TechSur Solutions

June 2025 – Present

Reston, Virginia

- Developed an **AI-driven code-generation platform using CrewAI and MCP** that transforms user stories into full-stack applications with automated testing and documentation, **reducing development time 70%**.
- Built **automated error fixing agents** that diagnose compilation failures, make code corrections, and re-verify builds, **improving first-attempt success from 30% to 85%**.
- Automated unit test generation** for Java microservices using TestNG and Mockito, **enabling 90% code coverage** and reducing QA effort through self-healing test agents.
- Integrated a **FastAPI platform with GitHub, Jira, and Supabase** to deliver a seamless code-to-deployment workflow with automated version control, **improving release cycle speed by 40%**.

### Data Engineer

Draup Business Solutions

December 2022 – June 2024

Bangalore, India

- Designed **scalable PySpark ETL pipelines on AWS EMR** to process 50 TB+ workforce data, **improving runtime by 30% and ensuring 99% data accuracy** through optimized partitioning and strict schema validation.
- Automated **daily validation for 200M+ records using Airflow DAGs**, powering a live data-quality dashboard that cut QA escalations by 50% and strengthened data trust across the clients.
- Modeled **Redshift OLAP schemas** for 20M+ job and location records, optimizing joins and aggregations to **deliver 40% faster analytical queries for business stakeholders**.
- Implemented a **serverless data pipeline using AWS Lambda + DynamoDB** for on-demand S3 queries, reducing ad-hoc client **data delivery time by 30%**.

## PROJECTS

### HR Smart Screener | GitHub | BERT, LLAMA, Streamlit,

May 2025 – June 2025

- Built an AI-powered resume screening web app using BERT, LLaMA 3.2, and keyword matching with a Streamlit interface, enabling multi-resume uploads, real-time fit scoring, and reducing candidate shortlisting time by over 60%.

### TravelGenie | GitHub | Python, REST APIs, BERT, RAG

March 2025 – May 2025

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

### Personalized Academic Research Assistant | GitHub | NLP, RAG, Langchain, LLM

Dec. 2024 – Jan. 2025

- Devised an academic research assistant integrating RAG, LangChain, and FAISS with SciBERT for advanced document search. Leveraged Ollama 3.2 for interactive summarization, improving relevance by 40% and reducing research time by 60%.

### Cotton Field Detector | GitHub | Hackathon, Deep Learning, U-NET, Pytorch, Computer Vision

Nov. 2024 – Dec. 2024

- Applied U-Net deep learning in PyTorch to segment cotton fields from satellite imagery with 92% IoU and 88% accuracy. Enabled automated crop mapping and reduced manual inspections.

## SKILLS

**Programming & Data Processing:** Python, SQL, Pandas, PySpark, Shell Script, Bash, REST/FAST APIs, Kafka

**Machine Learning & AI:** Scikit-learn, PyTorch, TensorFlow, Gradient Boosting, Regression, NLP (BERT, LLaMA, GPT), RAG, LangChain, CrewAI, LlamaIndex, HuggingFace Transformers

**MLOps & Deployment:** Docker, Streamlit, FastAPI, CI/CD (GitHub Actions), MLflow, Kubernetes

**Cloud & Databases:** AWS (EC2, S3, Lambda, Redshift, Glue), Azure Databricks, Relational (PostgreSQL, MySQL), NoSQL (MongoDB, Redis)