

Aditya Ravi

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EDUCATION

K. J. Somaiya School of Engineering

2023 to 2027

B.Tech in Artificial Intelligence and Data Science, Mumbai · CGPA 9.77

EXPERIENCE

Makeflow India

Sep 2025 to Nov 2025

Backend Developer Intern, Mumbai

- Built core session management and conversation flow for Blumy, a WhatsApp-based AI wellness counselor: session initialization, stage-based routing across Concern, Solution, and Feedback stages, and the introduction-to-concern transition, in Node.js.
- Built the introduction pipeline for new and returning users: conditional profile capture, returning-user shortcut paths, and keyword-based crisis detection that skips onboarding for urgent messages.
- Refactored the backend: split AI response generation into its own service, consolidated duplicate utilities, and restructured the conversation entry function so profile building no longer sat inside stage-specific session handling.

Suvidha Foundation

May 2025 to Jul 2025

Machine Learning Intern, Nagpur

- Fine-tuned 6 summarization models (BART, Pegasus, DeepSeek-v1, FLAN-T5, T5, BigBird-Pegasus); BART performed best at ROUGE-1 0.44, ROUGE-2 0.20, ROUGE-L 0.30.
- Iteratively fine-tuned a PRIMERA multi-document summarization pipeline, raising ROUGE-1 from 0.36 to 0.44 and ROUGE-L from 0.18 to 0.20.

RESEARCH

PRISM: Policy-Routed Strategy Selection for Hallucination Mitigation in Large Language Models

2026

Co-author · Submitted to *icSoftComp 2026 (Springer CCIS)*, under review

- Fine-tuned an encoder router that selects among retrieval, DoLa, CoVe, and calibration strategies over Mistral-7B-Instruct on a shared backbone.
- 0.528 pooled accuracy across 7 systems, +0.030 to +0.050 over every fixed strategy, at roughly half the tokens of the costliest baselines.

PROJECTS

Real-time fraud detection with quantum-inspired feature selection

Python · Spark MLlib · Kafka

- Team of 3; streaming pipeline scoring transactions in real time on Spark, with a quantum-inspired evolutionary algorithm trimming input features by 90%.
- AUC-ROC 0.956 vs. 0.964 for the full feature set with 90% fewer inputs; 7.2ms per-transaction latency, 3,285 transactions/s streaming throughput.

Churn and tenure prediction on 624k users

Python · LightGBM · CatBoost · XGBoost

- End-to-end churn pipeline on 624,048 anonymized usage logs, engineered leakage-safe from only the first 60 of 90 days.
- AUC-ROC 0.88 and recall 0.83 on held-out data; tenure regression MAE 2.31, R^2 0.939.

Pharma commercial analytics platform

Python · DuckDB · dbt · Dagster · Plotly

- Dimensional warehouse on 2.7M CMS Medicare Part D rows, with an SCD2 territory-history snapshot and seven analytics marts in pure SQL.
- 147 dbt tests as schema contracts; a Dagster asset check reconciles raw versus built row counts with zero variance across 2020 to 2024.

PolicyRAG: auditable QA over SEC filings

Python · FastAPI · ChromaDB · React · Supabase

- Auditable question-answering over SEC filings: every answer cites the retrieved context passages it used.
- Weighted Trust Score combining faithfulness, citation precision and recall, context relevance, and completeness.

HeatDoc: OCR-aware retrieval over disaster-management PDFs

Python · FAISS · BM25 · OCR · FastAPI

- Team of 2; hybrid FAISS-plus-BM25 retrieval over 875 pages across 34 disaster-management PDFs, with per-page OCR routing.
- 32.9% of pages routed to OCR; abstains below a fixed similarity floor; evaluated on a 60-question gold set.

SKILLS

Languages: Python, C++, Java, SQL, TypeScript

Machine learning: PyTorch, scikit-learn, pandas / NumPy, Hugging Face Transformers, Spark MLlib

Data: Kafka, PySpark, dbt, Dagster, DuckDB

Backend: FastAPI, Spring Boot, Node.js, PostgreSQL, Redis

Tools: Git, Linux, Docker, GCP, Hyperledger Fabric

CERTIFICATIONS

Machine Learning Specialization (Stanford University / Coursera) · PyTorch for Deep Learning (Udemy) · Deep Learning A-Z (SuperDataScience) · AI Engineer Core Track (Ligency) · DevOps: Complete Kubernetes Course (Udemy)