

# Gyan Prakash Kushwaha

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## SUMMARY

AI Engineering Undergraduate (**IIT Madras**) with strong DSA fundamentals (**200+** LeetCode problems). Experienced in building **agentic RAG workflows** and end-to-end ML systems using **LangGraph, FastAPI, and Vector DBs**. Proficient in reducing inference latency and deploying scalable AI solutions. Seeking an SDE/AI internship to leverage skills in Generative AI and backend optimization.

## EDUCATION

### Indian Institute of Technology (IIT), Madras

BS in Data Science and Applications; CGPA: 8.18/10

Chennai, Tamil Nadu

2023 – 2027

## SKILLS

Programming Languages	Python, JavaScript (ES6+), Java, SQL
Backend Frameworks	Flask, FastAPI, Node.js
Frontend Technologies	React, Vue.js, Bootstrap, Tailwind CSS
Databases & Storage Systems	PostgreSQL, SQLite, DuckDB, Redis
Vector Databases & Search	FAISS, ChromaDB
Machine Learning & NLP	NumPy, Pandas, Scikit-learn, PyTorch, TensorFlow, NLTK
Data Visualization	Power BI, Matplotlib, Seaborn, Plotly
Generative AI & LLM Frameworks	LangChain, LangGraph, LangSmith, AGNO
DevOps & Systems	Linux, Git, GitHub, Celery
Cloud Platforms	AWS (EC2, S3, Lambda), GCP

## PROJECTS

### YouTube RAG Chatbot | LangGraph, FastAPI, FAISS, AsyncSQLite, Vue.js, Gemini (Flash-Lite) [Repo Link](#)

- Reduced **Time-to-First-Token (TTFT)** by **90%** (from 5s to <500ms) by engineering a real-time async streaming pipeline with **FastAPI** and **LangGraph**, significantly improving user perceived responsiveness.
- Architected a **stateful RAG workflow** using **LangGraph** and **AsyncSQLite** to orchestrate persistent, multi-turn conversations, enabling context coherence across **1-hour+ video transcripts**.
- Increased RAG response accuracy by implementing **Maximal Marginal Relevance (MMR)** search, filtering **90% of redundant context** from long-form audio transcripts to minimize **LLM hallucinations**.

### CropGuardian-AI | LangGraph, FastAPI, Pydantic, Gemini 1.5 Pro, OpenMeteo [Repo Link](#)

- Architected a **multi-agent workflow** using **LangGraph** to orchestrate **3 specialized agents** (Vision, Weather, Agronomy), automating the complex reasoning chain from image analysis to actionable advice with <**3s latency**.
- Implemented strict **Structured Output** enforcement using **Pydantic** and **Gemini 1.5 Pro**, achieving **100% schema compliance** for JSON responses and eliminating parsing errors in the frontend application.
- Designed a **context-aware reasoning engine** that grounds visual diagnosis in real-time environmental data (**OpenMeteo API**), generating location-specific farming action plans based on **7-day weather forecasts**.

### Customer Churn Predictor | Python, Scikit-learn, XGBoost, MLflow, Streamlit [Repo Link](#)

- Developed a modular machine learning pipeline to process **100,000 customer records**, benchmarking performance across **4 ensemble algorithms** (XGBoost, Random Forest, AdaBoost, Gradient Boosting) to identify optimal churn predictors.
- Engineered a robust training workflow integrated with **MLflow** to systematically track model metrics, parameters, and version history, ensuring **reproducibility** across experimentation cycles.
- Deployed the best-performing model as an interactive web application using **Streamlit**, enabling non-technical stakeholders to input customer demographics and generate **real-time churn risk assessments**.

- Developed a Content-Based Movie Recommender System using **Python** and **Streamlit**, processing a dataset of **4,800+ movies** to generate personalized top-10 viewing suggestions.
- Engineered a feature extraction pipeline with **Pandas** and **Scikit-Learn**, transforming unstructured metadata (genres, cast, crew) into a **5,000-feature** Bag-of-Words model to calculate **Cosine Similarity** scores.
- Deployed an interactive web application integrating the **TMDB API** to fetch real-time posters, utilizing **Pickle** serialization to optimize data loading and deliver recommendations efficiently.

## ACHIEVEMENTS

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- **Kaggle Expert:** Top 4% globally (Rank 341), 1 Silver & 9 Bronze medals; datasets with 22K+ views and 5.6K+ downloads
- **LeetCode:** Solved 219+ DSA problems (100+ Medium)
- **HackerRank:** 5★ Gold Badge (SQL)