

# Kunal Paliwal

✉ kunalpaliwal2003@gmail.com    ☎ +91 9929222647    📁 Portfolio    🐙 Github    in LinkedIn

## Experience

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### Data Analyst Intern

Remote

PreProd Corp.

Nov 2023 – May 2024

- Implemented Kafka messaging queue with PySpark for real-time inventory data streaming, processing 900K rows in 2-second batches of 100K.
- Built a scalable Data-ML pipeline for restaurant demand forecasting on 100K samples, with an RMSE of 63.
- Led MLOps interface frontend, streamlining model monitoring and user interaction.

### Open Source Contributor

May 2025 – June 2025

IEEE Summer of Code

- Contributed to an open-source GenAI-powered app for predictive agricultural insights.
- Built and integrated backend modules for data handling supporting ML features.
- Merged 4 PRs into a large collaborative codebase, showcasing strong teamwork and technical skills.

## Projects

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### Food Demand Forecasting

[Github](#) 

Techstack: Python, Flask, PowerBI, DVC, MLFlow, MongoDB, SQLite, Kafka, Pyspark, MongoDB

- Developed an industry-grade food demand forecasting system with scalable Data and ML pipelines.
- Streamed over 900K records using Kafka and PySpark in 100K-sized batches, enabling real-time data processing; managed structured and unstructured data across MongoDB and SQLite for downstream ML tasks.
- Forecasted restaurant demand using 100K+ samples with optimized throughput and latency.

### Fiedly

[Live Demo](#)  | [Github](#) 

Techstack: Flask, Scikit-Learn, Pytorch, Google Generative AI, OpenWeatherMap API, ReactJS, TailwindCSS,

- Developed an intelligent web platform for modernizing farming with predictive insights and agricultural tools.
- Integrated OpenWeatherMap API and trained ML models on Kaggle datasets for crop (95.45%) and fertilizer (98.73%) prediction using 2,200 samples with 8 features.
- Utilized Google Generative AI to generate human-readable result summaries with contextual insights.

### SafeSpace AI

[Live Demo](#)  | [Github](#) 

Techstack: ReactJS, NodeJS, MongoDB, Flask, Pytorch, Transformers, FAISS, Gemini Generative AI

- Built a RAG pipeline using Gemini Flash 2.0 and FAISS for dense vector search over CBT responses.
- Used PyTorch sentence transformers for real-time emotional prompt embedding and semantic retrieval.
- Integrated MongoDB-based journaling for personalized sentiment tracking and adaptive responses.

## Education

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### VIT Bhopal

Bhopal, India

B.Tech in Computer Science (AI-ML)

Sep 2021 – Present

GPA: 8.53 / 10

### University of Michigan

Online (Coursera)

Applied Machine Learning in Python

Completed: 2022

## Programming Skills

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Languages: Python, JavaScript

Technologies: Tensorflow, Pytorch, Kafka, PySpark, Flask, FastAPI, Mlflow, Scikit-Learn, Git, MongoDB, SQL, REST APIs, React, Nodejs, Nextjs