

PROJECTS

- End-to-End ML Pipeline with MLOps** | *Kubernetes, MLflow, Airflow, Docker, AWS, FastAPI* 2024
- Designed and deployed a scalable machine learning pipeline for tabular data, automating data ingestion, model training, and deployment using Airflow, MLflow, and Docker on AWS EKS.
 - Implemented CI/CD for model retraining and versioning, with automated monitoring and rollback using MLflow and Kubernetes.
- LLM Fine-Tuning and Deployment** | *Hugging Face, Transformers, FastAPI, Streamlit, GCP* 2024
- Fine-tuned open-source LLMs (e.g., Llama 2, Falcon) on domain-specific datasets using Hugging Face Transformers and deployed as RESTful APIs with FastAPI.
 - Built an interactive Streamlit app for real-time inference and integrated with GCP Vertex AI for scalable serving.
- Real-Time Data Analytics Platform** | *Kafka, Spark, Snowflake, Power BI* 2023
- Developed a real-time analytics platform for streaming financial data using Apache Kafka and Spark Structured Streaming.
 - Automated ETL pipelines to Snowflake and built interactive dashboards in Power BI for business insights.
- Computer Vision for Defect Detection** | *PyTorch, OpenCV, TensorFlow, AWS Sagemaker* 2023
- Built and deployed deep learning models for automated defect detection in manufacturing images, achieving 95%+ accuracy.
 - Leveraged AWS Sagemaker for scalable training and inference, and OpenCV for image preprocessing.
- Recommendation System at Scale** | *BigQuery, TensorFlow, Scikit-learn, Flask API* 2022
- Engineered a collaborative filtering and content-based recommendation engine for e-commerce, processing millions of records in Google BigQuery.
 - Served recommendations via a Flask API and monitored performance with custom analytics.
- Time Series Forecasting for Business** | *Prophet, ARIMA, DVC, Azure ML* 2022
- Implemented time series forecasting models (Prophet, ARIMA) for sales and demand prediction, with experiment tracking using DVC.
 - Deployed models to Azure ML for automated retraining and reporting.
- NLP Pipeline for Sentiment Analysis** | *spaCy, NLTK, BERT, GCP Vertex AI* 2021
- Developed an end-to-end NLP pipeline for sentiment analysis on social media data, leveraging spaCy, NLTK, and BERT embeddings.
 - Deployed scalable inference on GCP Vertex AI and visualized results with custom dashboards.