

Fraud Detection Deployment Architecture

A continuous machine learning (ML) model, often referred to as continuous training, involves setting up a system that automatically updates and improves the model over time as new data becomes available:

Deployment Workflow

Model

- A Machine learning model is trained. The model is then stored and loaded using joblib

Application

- Flask application handling csv uploads.
- Process the uploads using pandas
- Makes predictions on the data
- Verifies the predictions (human interaction)
- Logging all data

Frontend

- Simple HTML templates with CSS styling

Functionality

- Upload files
- Predict fraud
- Verify fraudulent transactions
- Log results
- Return to upload

Architecture

Client Layer: Web browser where files can be uploaded.

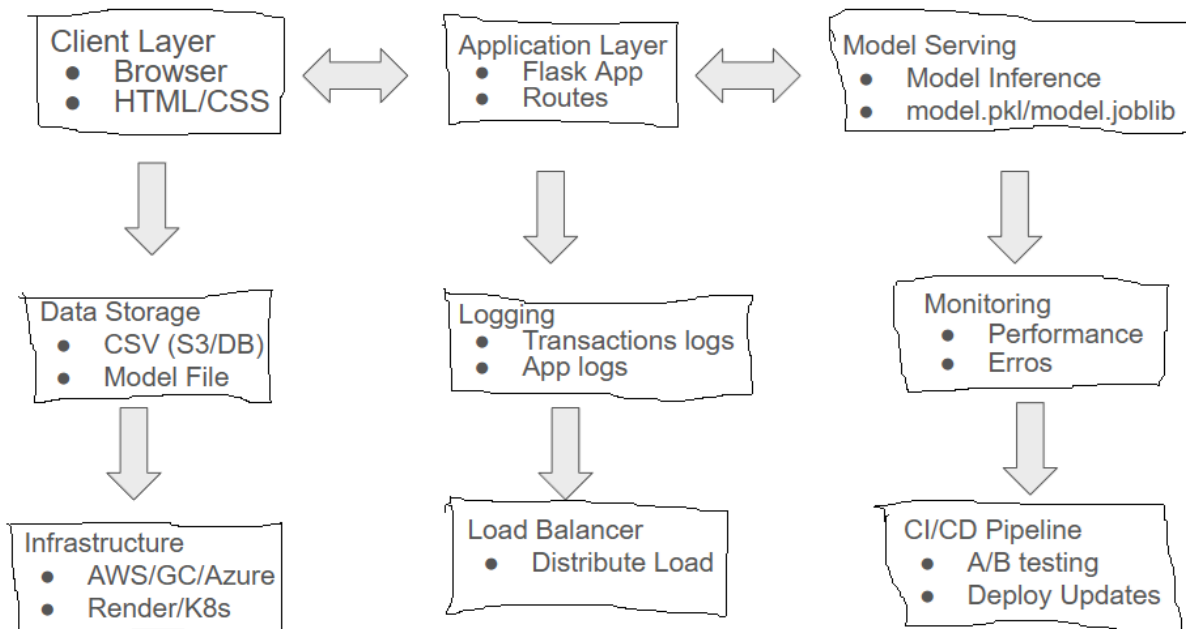
Application Layer: Flask App servicing the front end and handling logic

Model Serving Layer: Dedicated service or module for model inference

Data Storage Layer: Persistent storage for transaction_logs and model file

Infrastructure Layer: Hosting on cloud platform (AWS, Google Cloud, Render)

Flow Diagram



Retraining

The application will prompt for retraining when there are a certain number of entries in the log-file. The retrained model will then be A/B tested and redeployed if it performs better than the previous model.

... Model in Service