📖 User Manual: Fraud Detection Web Application

Welcome! This guide will help you use the Fraud Detection platform to upload data, run machine learning experiments.

1. Starting the Application

1. **Open the Application**

   - Make sure the application is running.

   - Open your web browser.

   - Go to: http://localhost:3000

2. Data Requirements

1. **Format**

   - CSV files only

   - Comma-separated values

   - UTF-8 encoding

2. **Data Quality**

   - No missing values (nulls)

   - Only numeric features (categorical allowed)

   - No text variables

   - Binary target variable (0/1)

3. **Column Names**

   - Unique column names

   - No spaces in column names

   - Target variable must be specified

Example Data Format

```
feature1,feature2,feature3,target
0.234,1.456,0,0
0.567,2.123,0,1
0.789,0.234,1,0
```

3. Uploading Data and Running a New Experiment

1. **Go to the Home Page**

   - You will see a dashboard with options like "ML Platform", "Previous Runs", and "Results".

2. **Start a New Run**

   - You will be prompted to upload two files:

     - **Train Data**: The main data for training the model (CSV format).

     - **Test Data**: The data for testing the model's predictions (CSV format).

   - Click **"Choose File"** to select each file from your computer.

3. **Launch the Experiment**

   - After both files are selected, click the **"Train & Predict"** button.

   - The system will begin processing your data. This may take a few minutes.

4. Viewing Experiment Results

1. **Check Progress**

   - You'll see the run's status on the dashboard (e.g., "Running", "Completed").

2. **View Results**

   - Once complete, click on your run in the list.

   - You'll see two main tabs:

     - **Feature Selection**: Shows which data features were used or dropped.

- **Test Results**: Shows model performance, fraud cases detected, and a confusion matrix.

3. **Understanding the Results**

- **F1 Score, Precision, Recall**: Higher values mean better model performance.

- **Fraud Cases Detected**: Number and percentage of transactions flagged as fraud.

- **Fraudulent Transactions Table**: List of flagged transactions.

- **Confusion Matrix**: Visual summary of model predictions.

5. Checking Previous Runs

1. **Go to "Previous Runs"**

- Enter a Run ID (from a past experiment) in the provided field.

- Click "Fetch Run" to view its details and results.