Overview:

This project aims to predict fake bills using logistic regression, a powerful classification algorithm. Fake bills can cause significant financial losses and undermine trust in the currency system. By employing machine learning techniques, we can automatically detect fraudulent bills and prevent their circulation.

Data:

The dataset used for training and testing consists of labeled samples of genuine and fake bills. Each sample contains various features extracted from the bills, such as size, texture, ink patterns, watermark, and more. The data has been preprocessed and is ready for model training.

Logistic Regression:

Logistic Regression is a popular machine learning algorithm for binary classification tasks. It models the probability of a sample belonging to a particular class and applies a threshold to make predictions. In this project, we'll use logistic regression to classify bills as genuine or fake based on their features.

Model Training:

The dataset will be split into training and testing sets to evaluate the model's performance accurately. The logistic regression model will be trained using the training data, adjusting its parameters to minimize the error.

Evaluation:

We'll assess the model's performance using various metrics, such as accuracy, precision, recall, and F1-score. A high accuracy and balanced precision-recall are essential to ensure reliable fake bill detection.

Deployment:

Once the model achieves satisfactory performance on the testing set, we'll deploy it to a production environment. The deployed system will take bill features as input and provide predictions on whether the bill is genuine or fake in real-time.

Usage:

To use the fake bills prediction system, follow these steps:

Install the required dependencies (list provided in the repository).

Download the trained model weights (if available).

Run the prediction script and provide the bill features as input.

Get the prediction results indicating whether the bill is genuine or fake.

Contributing:

Contributions to this project are welcome. If you find any issues or have suggestions for improvements, feel free to open an issue or submit a pull request.

Disclaimer:

While this model aims to detect fake bills accurately, it may not be 100% foolproof. It's essential to combine this tool with other security measures to ensure robust protection against counterfeit currency. Always exercise caution and rely on multiple verification methods when dealing with financial transactions.