

# Credit Card Fraud Detection

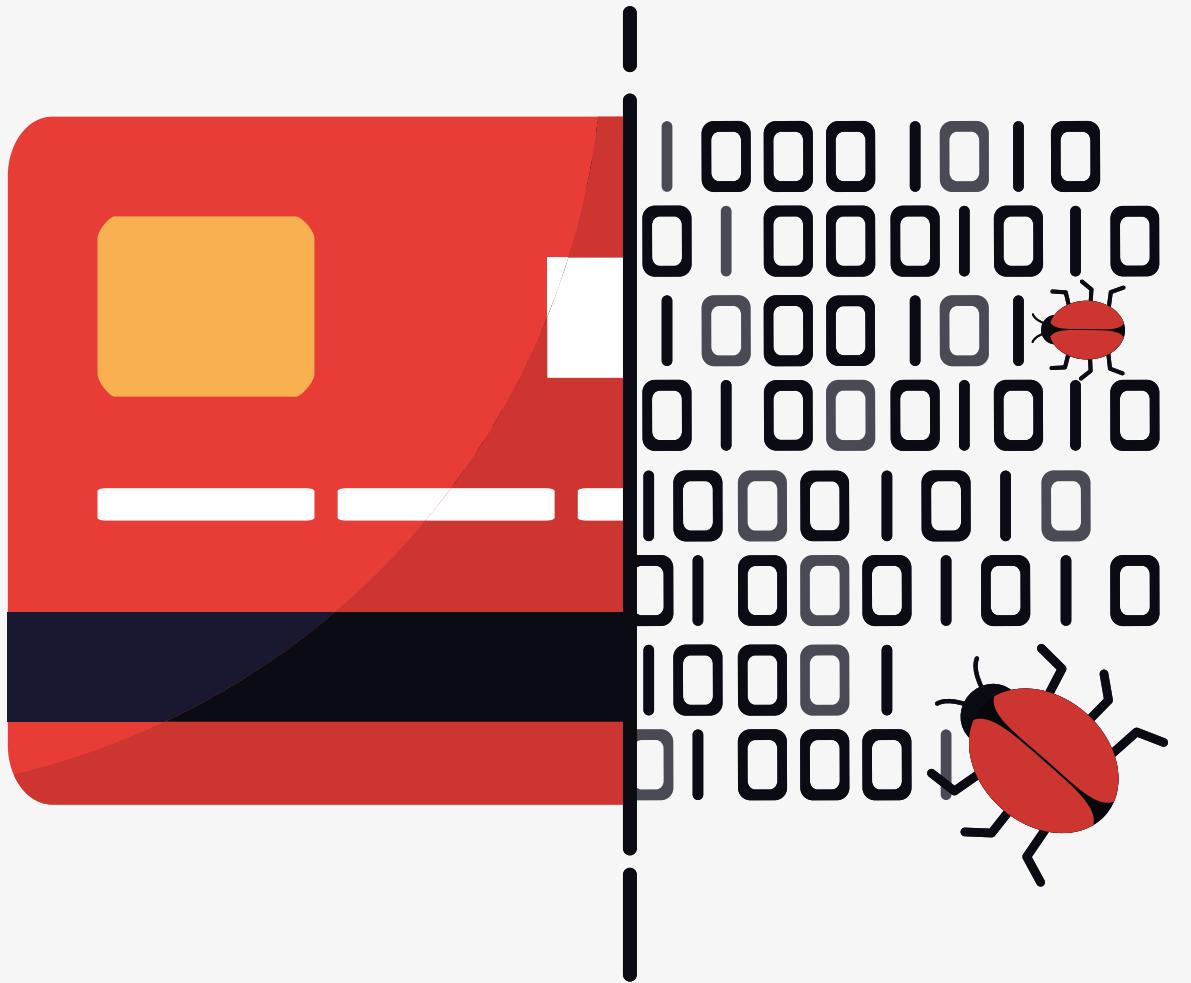
IT301 - Software Engineering

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# PROBLEM

## Credit Card Fraud



Today, since most financial transactions are online, hackers have started relying on keystroke logging through malicious software to grab credit card details. This usually begins after you have clicked on a suspicious link and unknowingly installed malware on your system.

The software records every key pressed on the system, eventually stealing card details, PIN, and more.



# SOLUTION

## ML-based Fraud Detection and Finances Dashboard Mobile App

The key objective of any credit card fraud detection system is to identify suspicious events and report them while letting normal transactions be automatically processed.

Simply put, ML models are able to learn from patterns of normal behavior and are very fast to adapt to changes. They can quickly identify patterns of fraud transactions.

This means that the model can identify suspicious customers even when there hasn't been a chargeback yet.

## Transaction Flagging

Potentially fraudulent transactions identified by the Machine Learning model are put on hold. Whenever such a hold is placed, the bank and the user are notified.

The database is continuously updated with new transaction status.

## Data Privacy

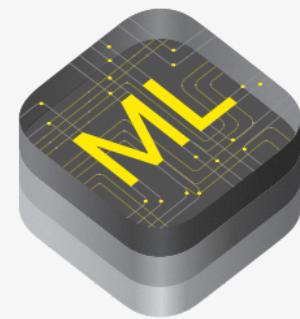
All user data is stored anonymously and locally on the device. No data that can be linked to the personal information of users is sent to any external servers since the Machine Learning is executed on-device.

# FEATURES

# TECH STACK



Swift



CoreML



Xcode



Python



# HOW IT WORKS?

1

## Financial Dashboard

An interactive dashboard for both the banks and users is presented. The dashboard uses CoreData to persistently save and display data - including relevant summary and statistics.

2

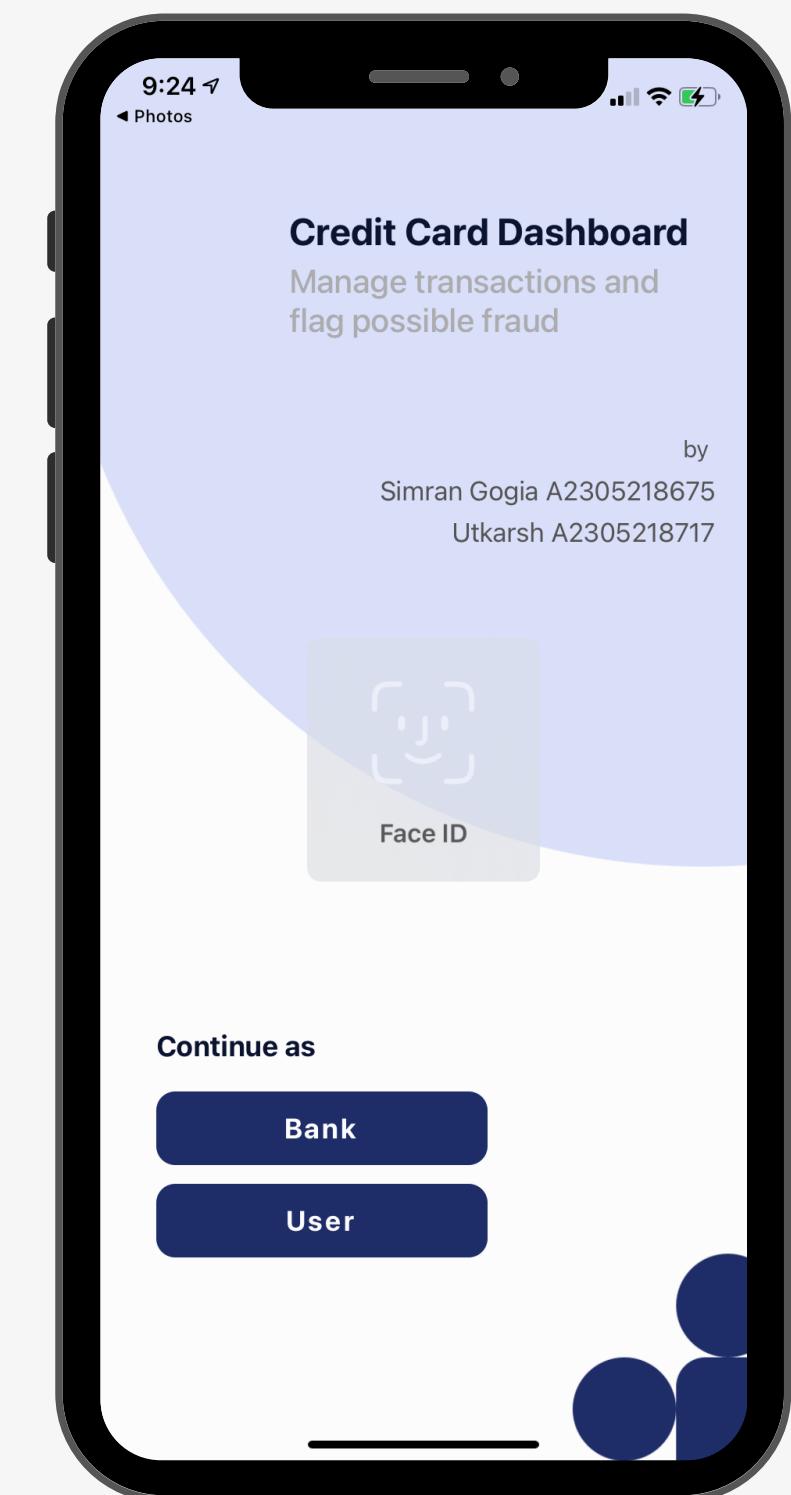
## Biometric Authentication

Utilising the reliable LocalAuthentication framework in the iOS SDK, users must authenticate using Touch ID or Face ID to login and/or process payments.

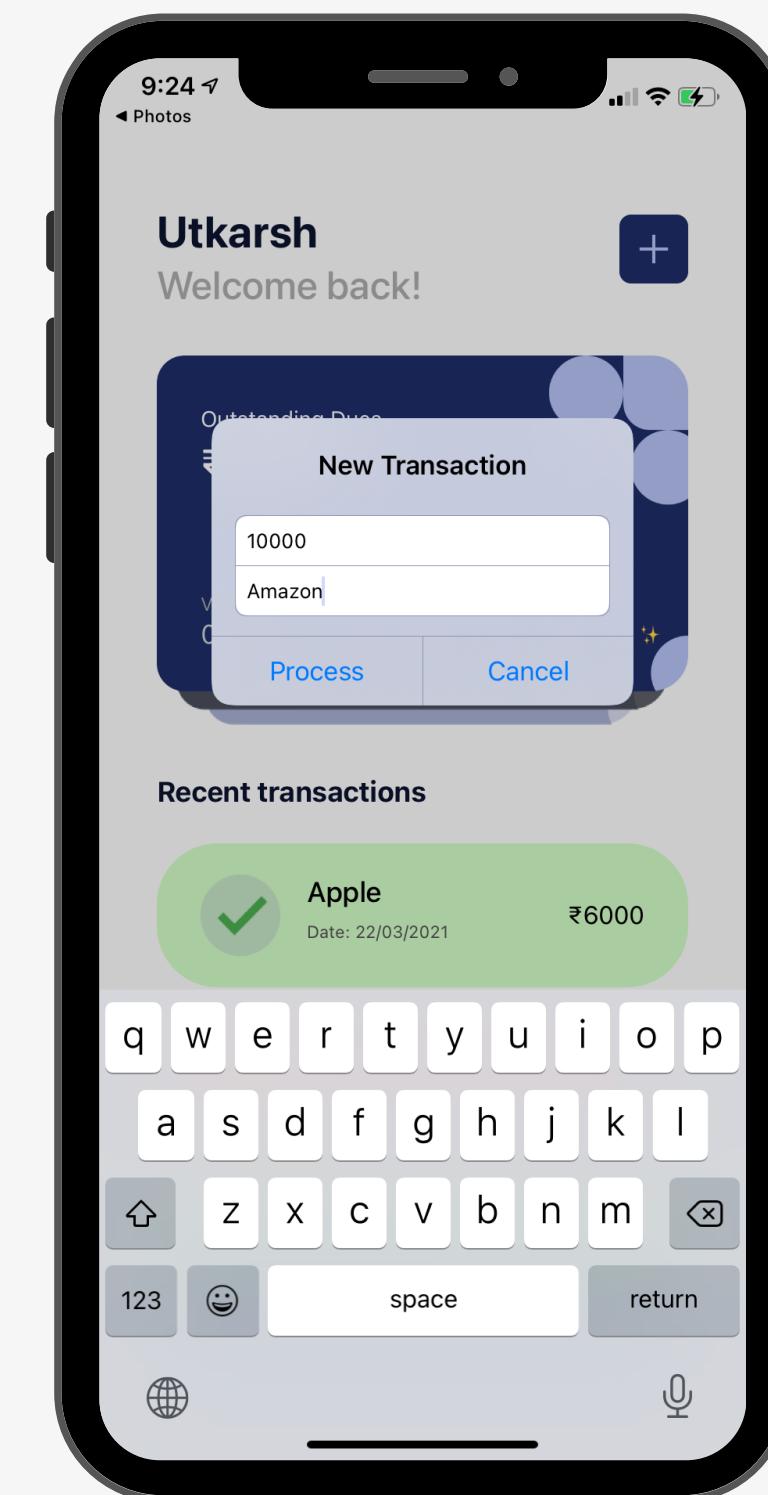
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## Machine Learning

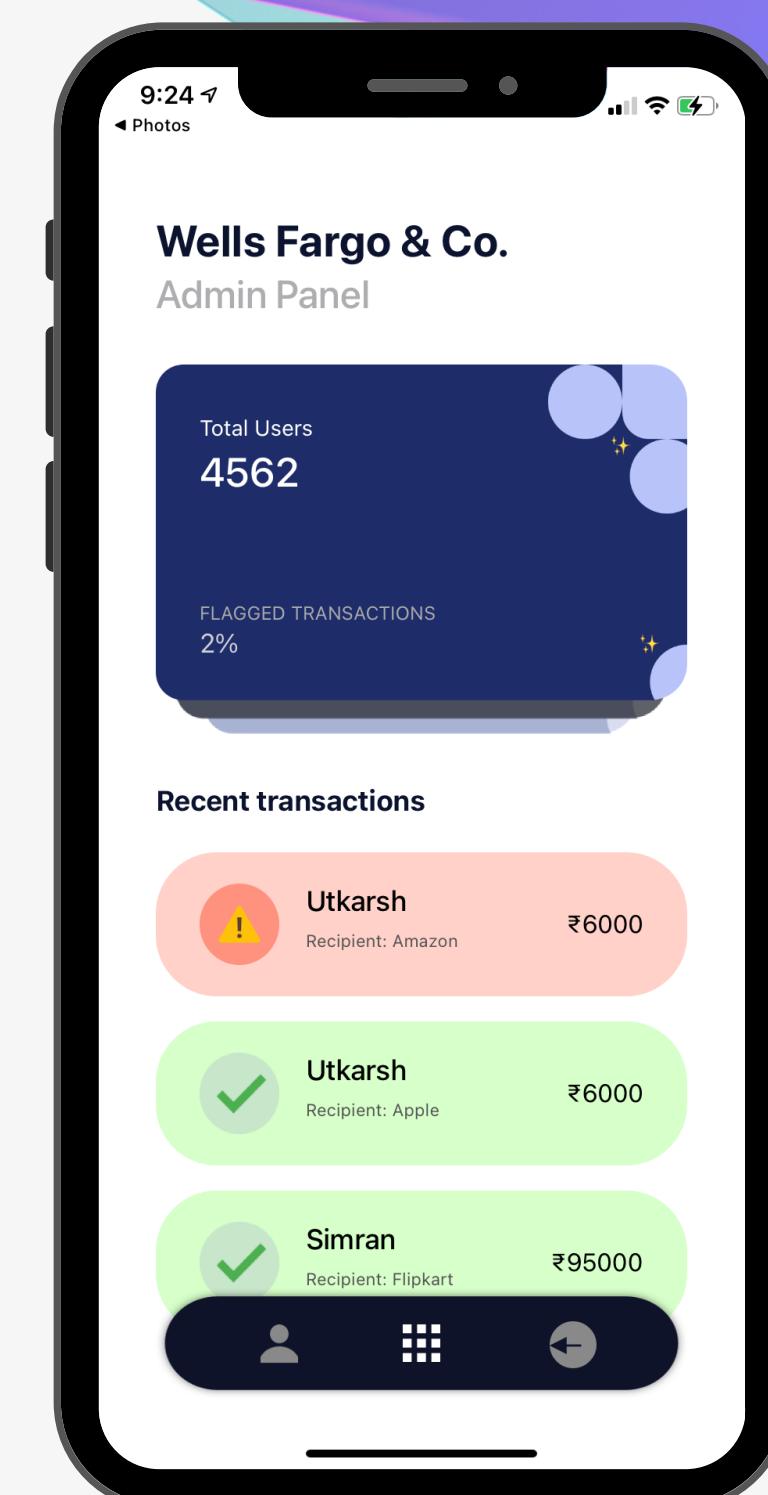
We use Machine Learning (Classification) to detect possible fraud and flag transactions. Customer history and basic demographics are used as independent variables.



Authentication



New Payment



Summary and Statistics