



Citi Technology x Virtual Hackathon

The Problem

The cheque and credit clearing company have identified cheque's as a likely soft target for fraudsters and have issued advice on the need to increase security in relation to corporate cheques. With this, in mind, it's never been more vital to protect your organisation from the threat of cheque fraud.



Some facts and figures:

Problem 1

Although check use is down overall, the Federal Trade Commission has received more complaints about check fraud in the last three years.

Problem 2

Approximately 1.2 million bad checks go through the check processing system every day.

Problem 3

A total of only £212.3 MILLION of attempted cheque fraud was prevented by bank security and monitoring systems in 2017.



10 Billion

Forged checks lead to about \$10 billion in total annual losses

731.8 M

was lost to banking finance fraud in 2017.

2.7M

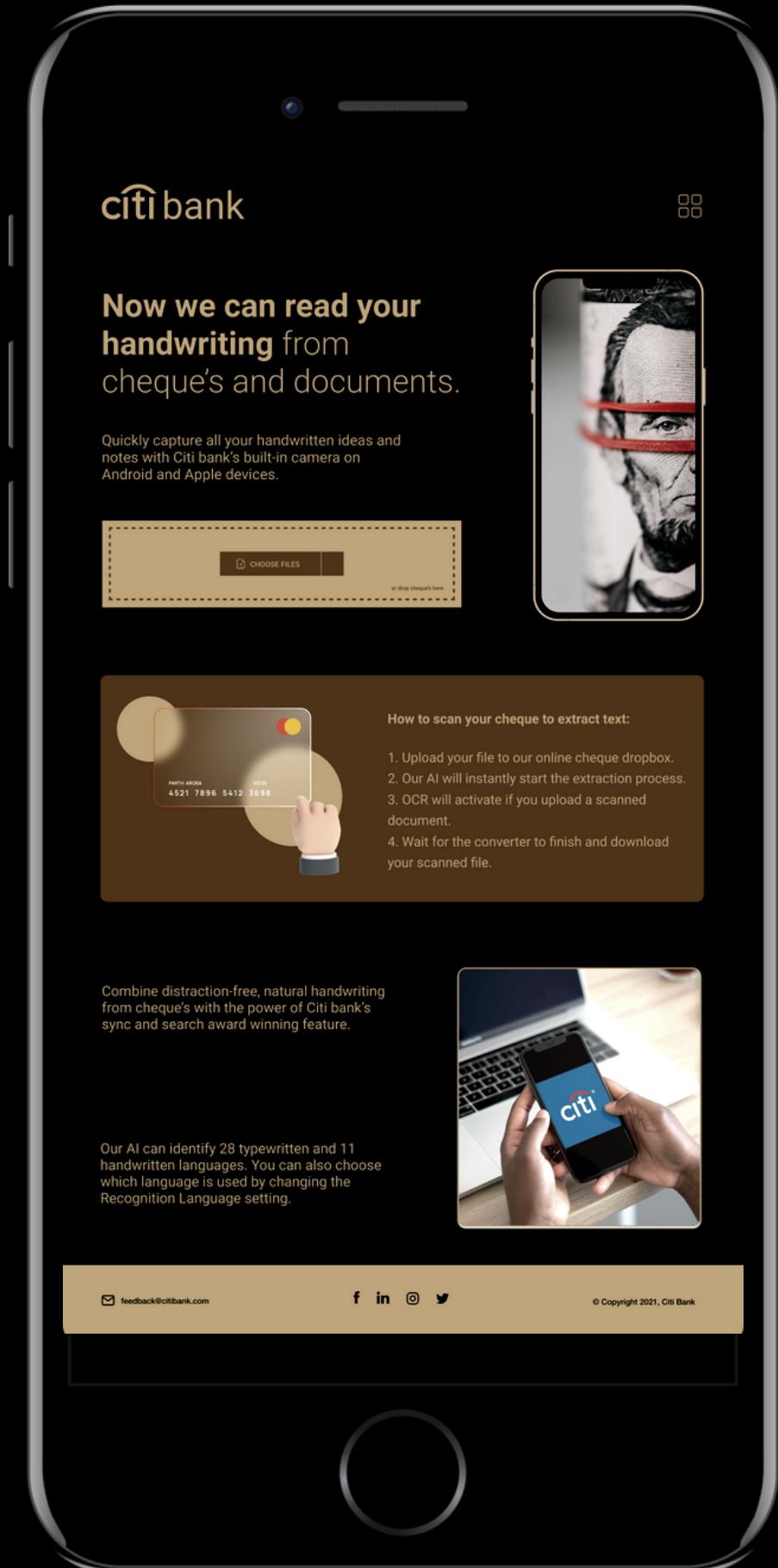
total was lost to COUNTERFEIT

Size the Market

The monthly distribution of the total value of cheque-based transactions that cleared through CTS (Cheque Truncation System). In October 2019, about Rs 6,591.44 billion worth of cheques payments were cleared by banks in India alone.

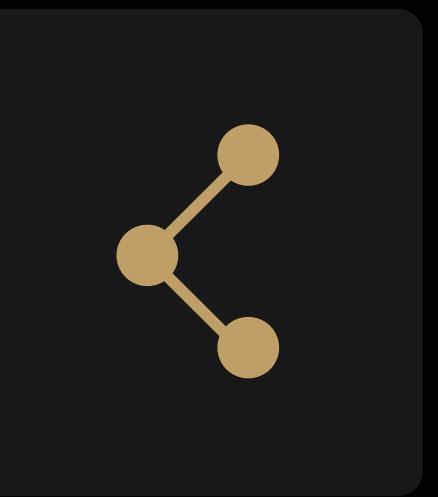
Product or Service

We built a model to detect text, alphabets and numbers, on the cheques. Our algorithm uses Google Cloud Vision to extract the text and other information from the document. Our model with an accuracy of approx 96% accurate in detecting amount in words is a cutting edge technology useful in detecting bank frauds and make the process a lot easier.



Solution

In general, bank cheques are used extensively for financial transactions in various organizations. Cheques are always verified manually. The traditional verification process will always include the date, signature, legal information, and payment written on the cheques. In our model, extracting the legal information from captured cheque image is obtained by preprocessing the image, extracting required information and then recognizing and verifying the handwritten fields.





We tried every approach, from Pytesseract to a custom-built Keras OCR model but none of them gave a good accuracy because of the dataset being very small, that's why we went with the Google Cloud Vision API which gives us an accuracy of 90%. You can check out our other approaches on github.



[Github link:](https://github.com/parthx9/CitiBank_Hackathon)
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Step 1

Choose your cheque file from the drive or local device to start extracting information.



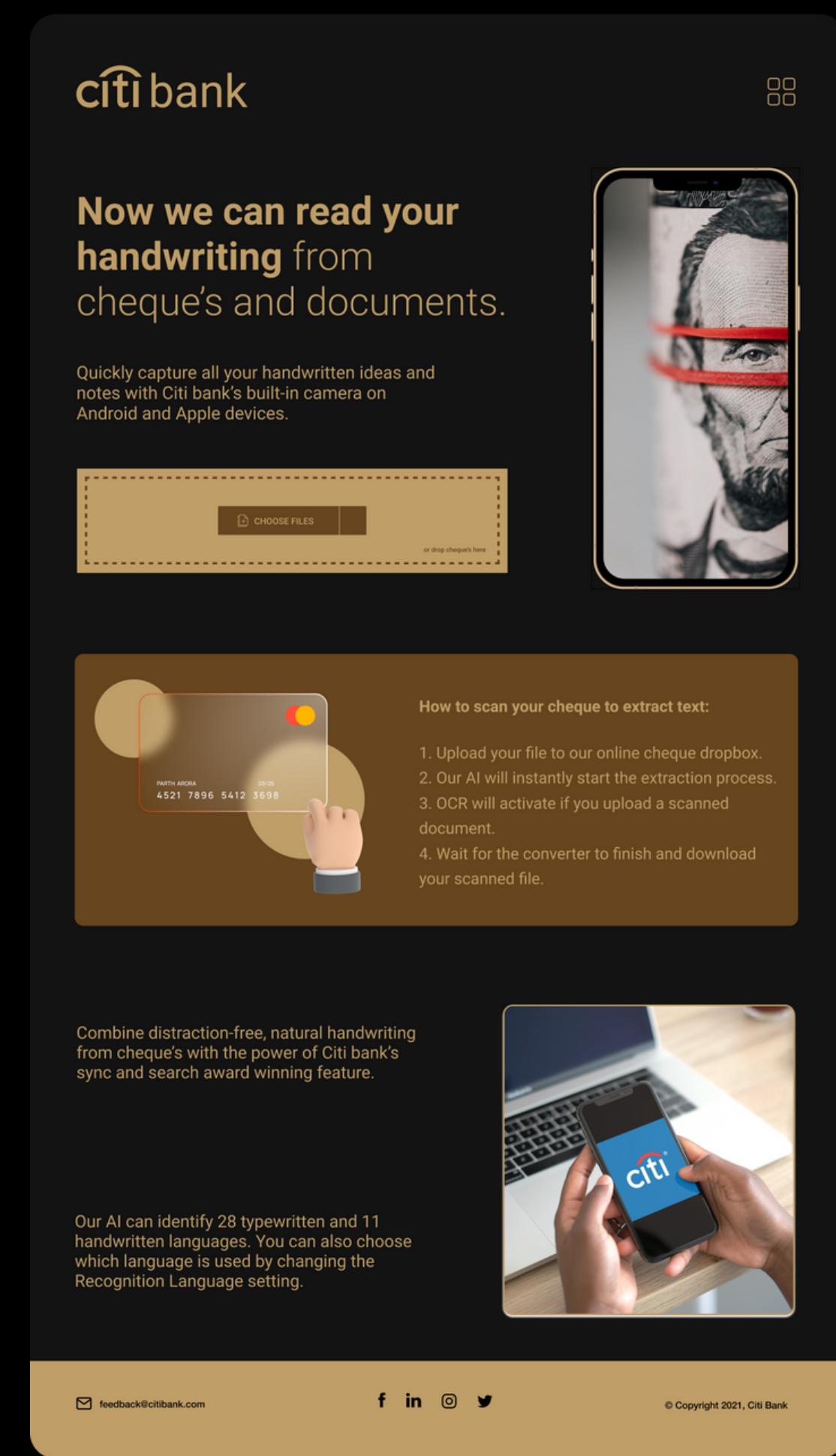
Step 2

OCR gets activated and extracts Name, Date and Amount mentioned on the cheque.



Step 3

Our AI gets you the detailed digitized information for the cheque and efficiently detects frauds, minimizes errors.



The screenshot shows the Citi Bank mobile application interface. At the top, the Citi logo is visible. Below it, a message reads: "Now we can read your handwriting from cheque's and documents." A text box below states: "Quickly capture all your handwritten ideas and notes with Citi bank's built-in camera on Android and Apple devices." To the right is a smartphone displaying a video of a person holding a cheque. A large dashed rectangular area is overlaid on the screen, with "CHOOSE FILES" and "or drop cheque's here" buttons inside. In the center, there's a section titled "How to scan your cheque to extract text:" followed by four steps: 1. Upload your file to our online cheque dropbox. 2. Our AI will instantly start the extraction process. 3. OCR will activate if you upload a scanned document. 4. Wait for the converter to finish and download your scanned file. At the bottom, another section discusses the "sync and search award winning feature" and mentions that the AI can identify 28 typewritten and 11 handwritten languages.

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