

TrueTone

Every Call, Decoded.

Problem statement

Mobile consumers have been overwhelmed with an alarming increase in scam calls in today's hyperconnected society, often leading to data breaches, emotional suffering, and financial theft. Scam calls impersonating delivery workers, banks, or government representatives are sent to thousands of residents in the UAE alone every day, taking advantage of the confidence that people have in their phones. Current caller ID systems are unable to identify these dangers in real time, leaving consumers vulnerable during calls.

Current solutions are frequently imprecise, inefficient, or difficult for regular consumers to use. A basic, real-time scam detection system that can recognize suspicious calls and AI-generated voices as they are received, notify users right away, and enable them to report unknown numbers. TrueTone aims to establish an interactive mobile application that uses caller ID lookup, a risk score driven by AI, and a user reporting system to detect and identify scammers in real time. The technology will be able to detect more sophisticated fraud attempts by studying and identifying AI-generated/deepfake sounds in addition to identifying suspect numbers.

Solution

TrueTone is an AI-powered app that uses Cognitive Intent Profiling to analyze incoming calls for questionable activity. Through the use of language cues and speech patterns, the app detects potentially fraudulent calls and immediately notifies users. Existing solutions are ineffective when scammers use a new SIM card or spoof a local number, so our app looks at the words and tactics rather than just the number.

TrueTone is made to swiftly identify and classify incoming calls as either genuine, unknown, or fraudulent. Its mobile-friendly interface shows findings in real-time with color-coded indications, mimicking a real call experience, while its backend uses pattern recognition to analyze numbers.

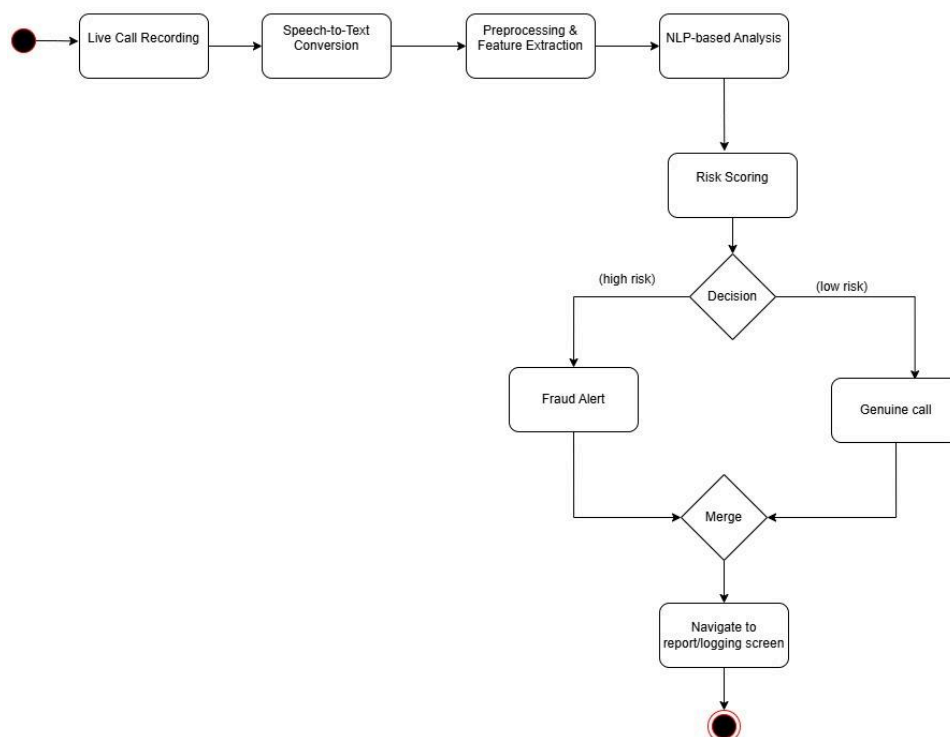
Approach

Our system works in a simulated setting to detect fraud calls in real time using **natural language processing (NLP)** techniques integrated into a complete detection pipeline. The device's microphone captures the conversation, which immediately triggers the main workflow. A high-accuracy speech-to-text engine processes the audio into a structured transcript. Consequently, the transcript is sent to the backend, where we use an **SVM model**, which achieved an accuracy of approximately **96%**, to detect fraud calls in real time. where the model analyzes the text for intent and language. The model looks for several signs of fraud, including:

- Requests for sensitive information (e.g., OTPs, account details, personal identifiers)

- Authority impersonation (e.g., bank officials, government agencies)
- Artificial urgency (e.g., "act immediately," "limited time")
- Financial inducement or scams (e.g., promises of prizes or investments)

The model gives a risk score based on the presence and combination of these warning signs. If the score goes above a predetermined high-risk threshold, TrueTone sends out an instant Fraud Alert. The alert shows the risk score, the identified scam type, and suggested actions. The system can automatically end the call to stop sensitive information from leaking or let legitimate calls continue. Lastly, to support ongoing learning and protect the users, the system safely logs call transcripts, risk score, and model insights into a central fraud database. This feedback loop helps the model learn new scam trends over time.



Outcome

TrueTone redefines voice call security by providing instant, AI-powered fraud detection in real time. It combines live speech capture, fast transcription, and NLP intent profiling to spot scams before any sensitive details are shared. This gives users immediate control to end fraudulent calls. This proactive approach prevents financial loss and protects vulnerable groups. It shows a scalable solution that can change how the UAE and GCC deal with rising phone scams. TrueTone doesn't just respond to fraud; it stays one step ahead, making every call safer.