

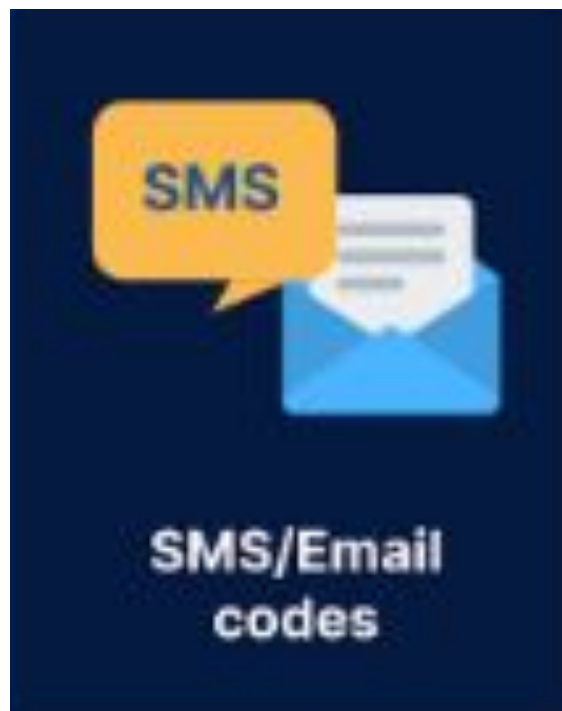
Bank of Baroda Hackathon – 2022

Keystroke.io: Authentication based on
Keystroke dynamics

Team name: 1001001



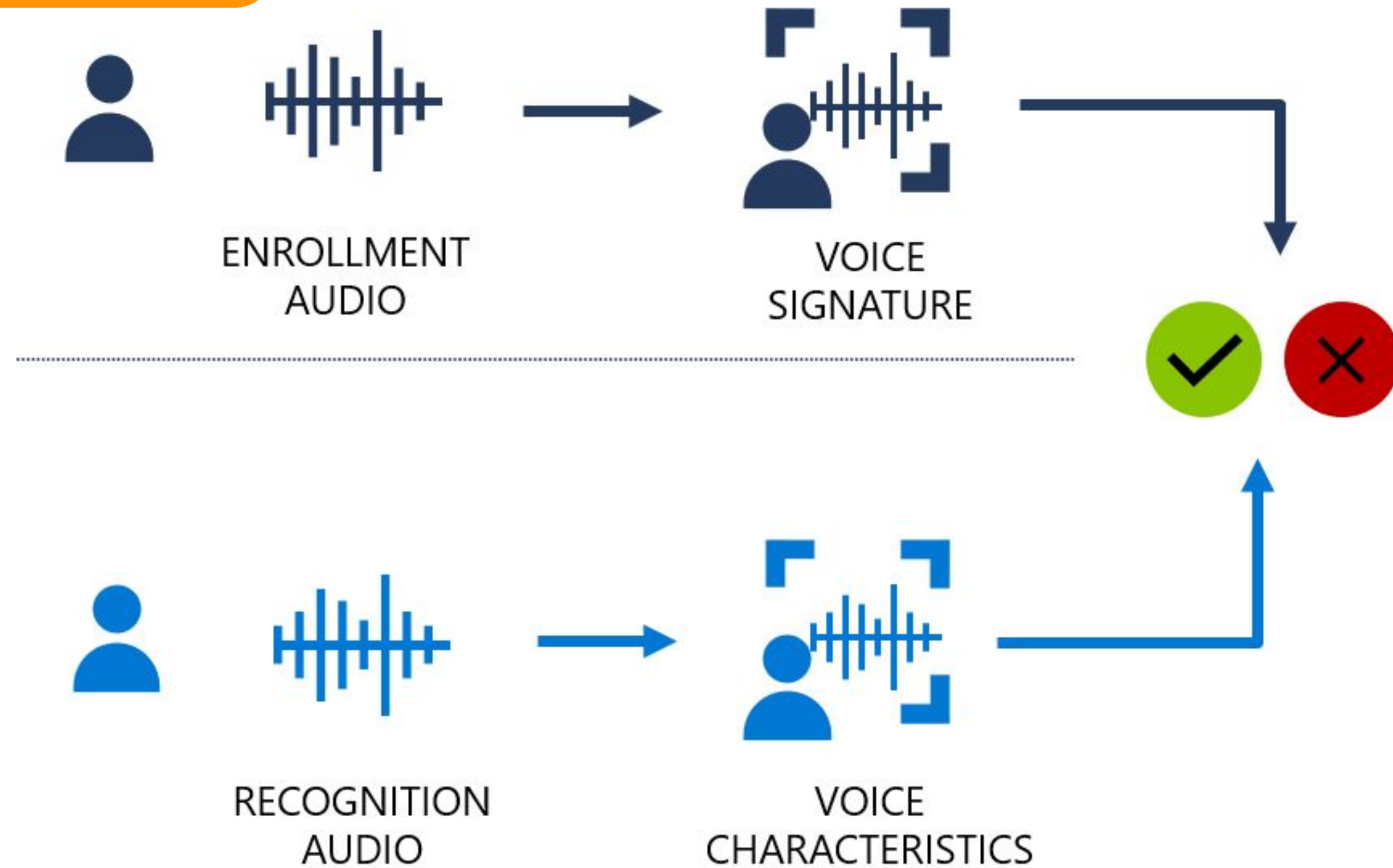
Introduction



The traditional authentication factors are weak as they can be "phished", stolen, discovered, and cracked in a number of ways. Yet businesses continue to use it to protect their most important corporate data.

Voice Authentication

Voice biometrics is the science of using a person's voice as a uniquely identifying biological characteristic in order to authenticate them.



Disadvantages

- Requires liveness detection to verify that a sample is from a live speaker and not a recording.
- It is not immune to spoofing attacks which includes recorded voice, computer-altered voice and synthetic voice.
- Background noise can impact the quality of the sample and, in turn, matching performance.

Demonstration



Problem statement

As we press into the twenty-first century, Digital banking has become the single most effective channel for financial institutions to drive growth, increase revenue and attract new customers. However, advanced safeguards against fraud and impersonation, as well as more foolproof measures against unauthorized access to computer resources and data are now being sought.

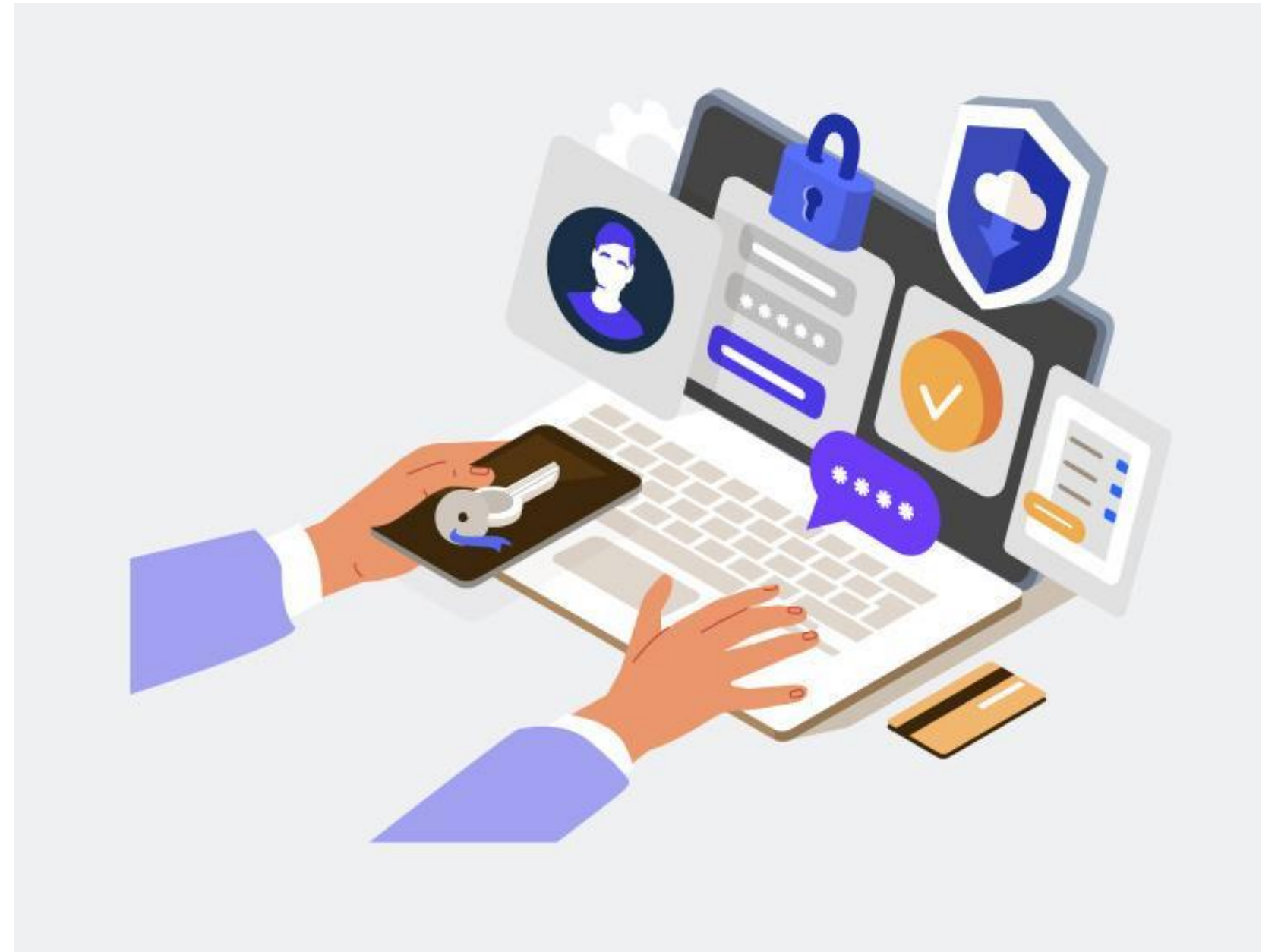
We present Keystroke.io, a safeguard mechanism which authenticates access by recognizing certain unique and habitual patterns in a user's typing rhythm.



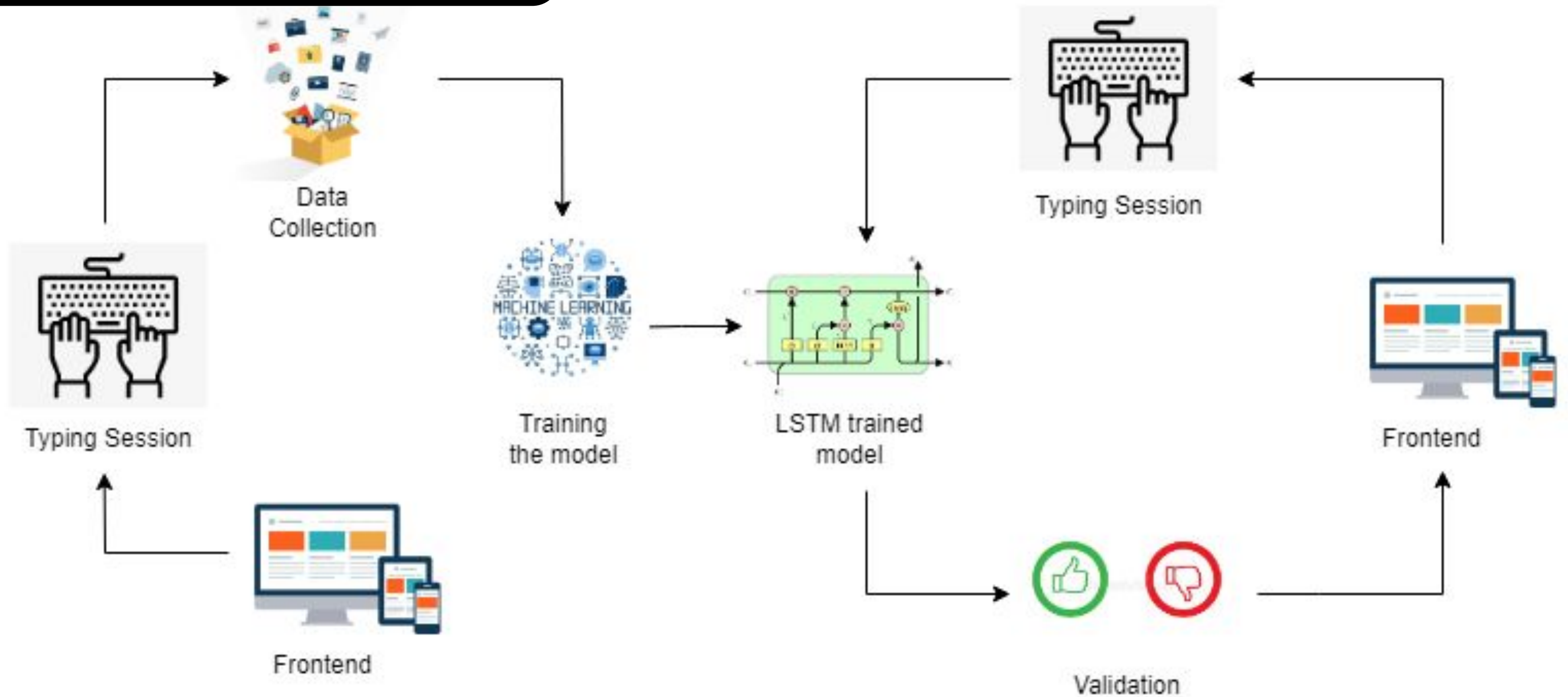
**Keystroke dynamics is not WHAT you
type, but HOW you type !!!**

Keystroke dynamics

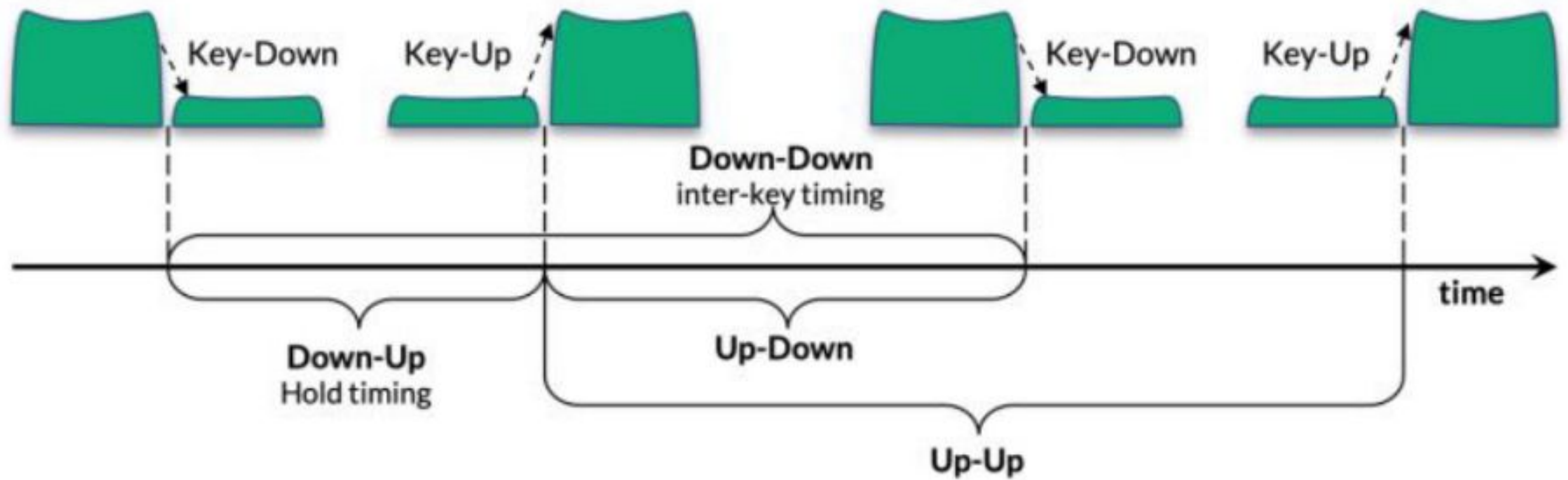
Keystroke Dynamics uses the manner and rhythm in which an individual types characters on a keyboard or keypad. The keystroke rhythms of a user are measured to develop a unique biometric template of the user's typing pattern for future authentication.



Data flow diagram



Features



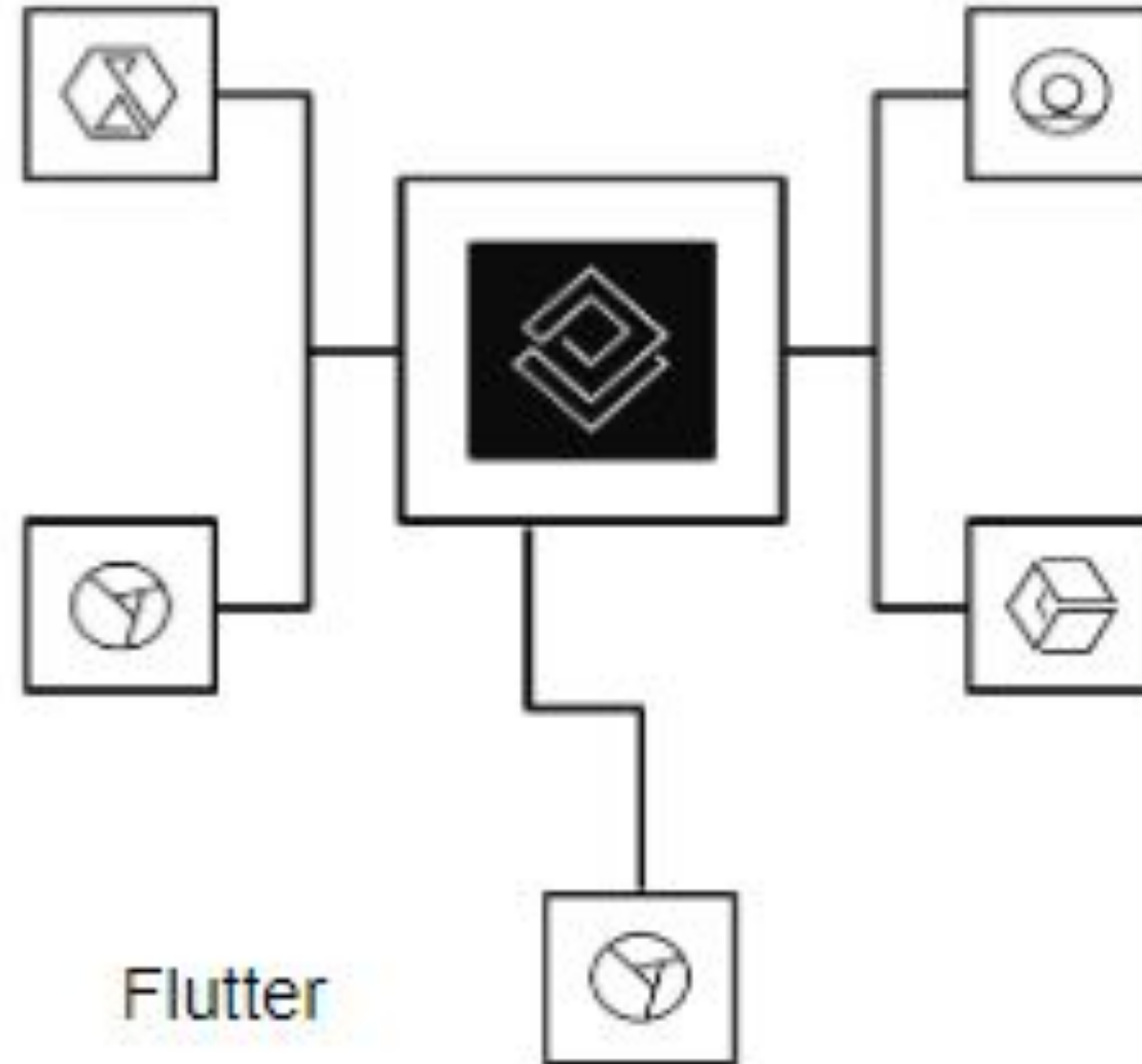
Tech Stack

Microsoft Azure & MySQL

For storing dataset

Python

Python is an interpreted, object-oriented, high-level programming language with dynamic semantics



Flutter

Open source framework for building beautiful, natively compiled, multi-platform applications

PyQt5

PyQt is a Python binding for Qt, which is a set of C++ libraries and development tools providing platform-independent abstractions for graphical user interfaces (GUIs)

Tensorflow

TensorFlow is a free and open-source software library for machine learning and artificial intelligence. It can be used across a range of tasks but has a particular focus on training and inference of deep neural networks

Architecture



Demonstration

KeyStroke.io

HOME

Register

Login

Scope of work

Keystroke.io can be used by banks, surveillance facilities and anyone for their personal use.

- Banks: The idea can be used in their web/mobile applications to track the behavioral patterns of their customers to continuously authenticate their identity apart from the usual authentication.
- Surveillance and Security Facilities: To monitor the systems and make sure an unauthorized individual is not occupying the control room.
- Personal use: Users who wish to keep their data secured and ensure their privacy can use keystroke.io to trigger a response in case a third person accesses their phone or computer system.

Future scope

- It can potentially be extended over mobile devices and other touch screens.
- It can be expanded to capture other behavioural patterns like mouse activity, device movement and touch screen behavior.
- It can be used in combination with speech as part of a multi-factor authentication system.



OUR TEAM

Meet our amazing team



K Divyasri



Kushagra Gupta



Lakshya Khandelwal



Praneeth Shetty

THANK YOU