Face Technology

By: Face X

Overview
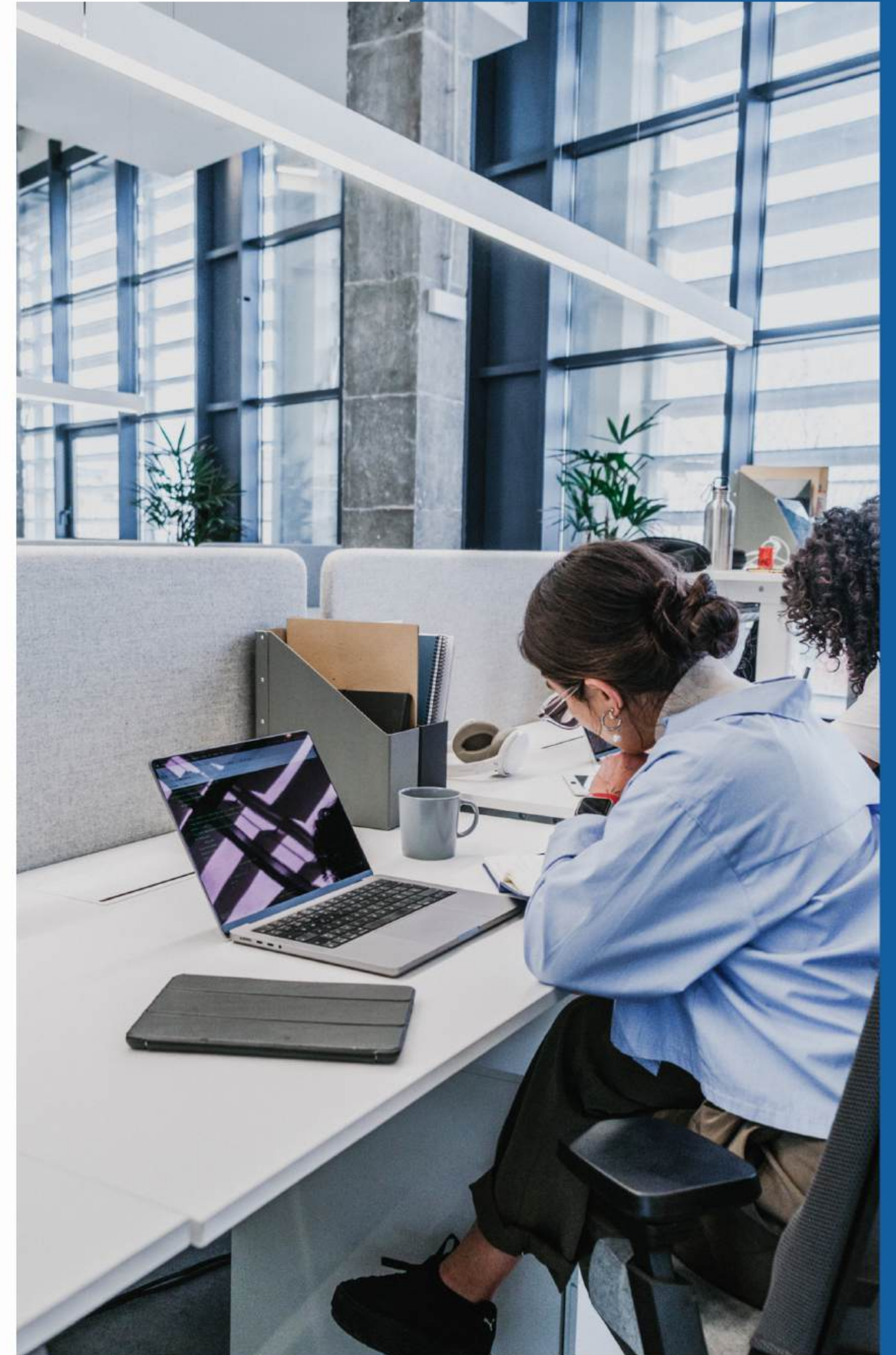
Introduction

Face X is an innovative Android application that utilizes face detection technology to enhance user interaction and security. Built using Kotlin, the project leverages advanced computer vision capabilities to detect human faces through a mobile device's camera in real-time.

Our Services

Face X aims to deliver a lightweight, fast, and accurate face detection experience, paving the way for applications in areas such as:

- Smart attendance systems
- Face-based app locking
- Real-time expression analysis
- Contactless access control

Problem Statement

In today's digital world, the demand for secure, contactless, and intelligent systems is rapidly increasing. Traditional methods of authentication and attendance tracking—such as passwords, PINs, ID cards, or fingerprint scanners—are either prone to misuse, time-consuming, or require physical contact, which raises hygiene concerns, especially in a post-pandemic world.

Moreover, many existing face detection systems are:

- Dependent on external hardware or high-end servers
- Slow or inaccurate in real-time mobile environments
- Lacking smart ML-based features such as expression recognition or landmark detection

Face X:
The Smart Solution

Face X is designed to solve these challenges by providing a real-time face detection Android application powered by machine learning algorithms. Built using Kotlin and integrated with Google's ML Kit, Face X offers the following solutions:

01 Contactless Authentication: Enables secure access without touching the screen or typing passwords.

02 Smart Attendance: Automatically detects and logs presence using face recognition, eliminating proxies and saving time.

03 Real-Time Detection & Analysis: Efficiently detects multiple faces, facial features, and expressions using on-device ML.

04 Mobile-Friendly: Runs entirely on Android smartphones using CameraX and ML Kit, requiring no external sensors or cloud computing.

Key Technologies Used:

- Kotlin: Modern, expressive language for Android development
- ML Kit (Face Detection API): Lightweight on-device ML for fast and secure detection
- CameraX: Modern camera API for high-performance image processing
- Android Studio: Development environment

ML Features Integrated:
- Detection of multiple faces in a camera frame
- Real-time landmark detection (eyes, nose, mouth, etc.)
- Smile and eye-blink detection
- Head tilt and face orientation tracking

App Demo
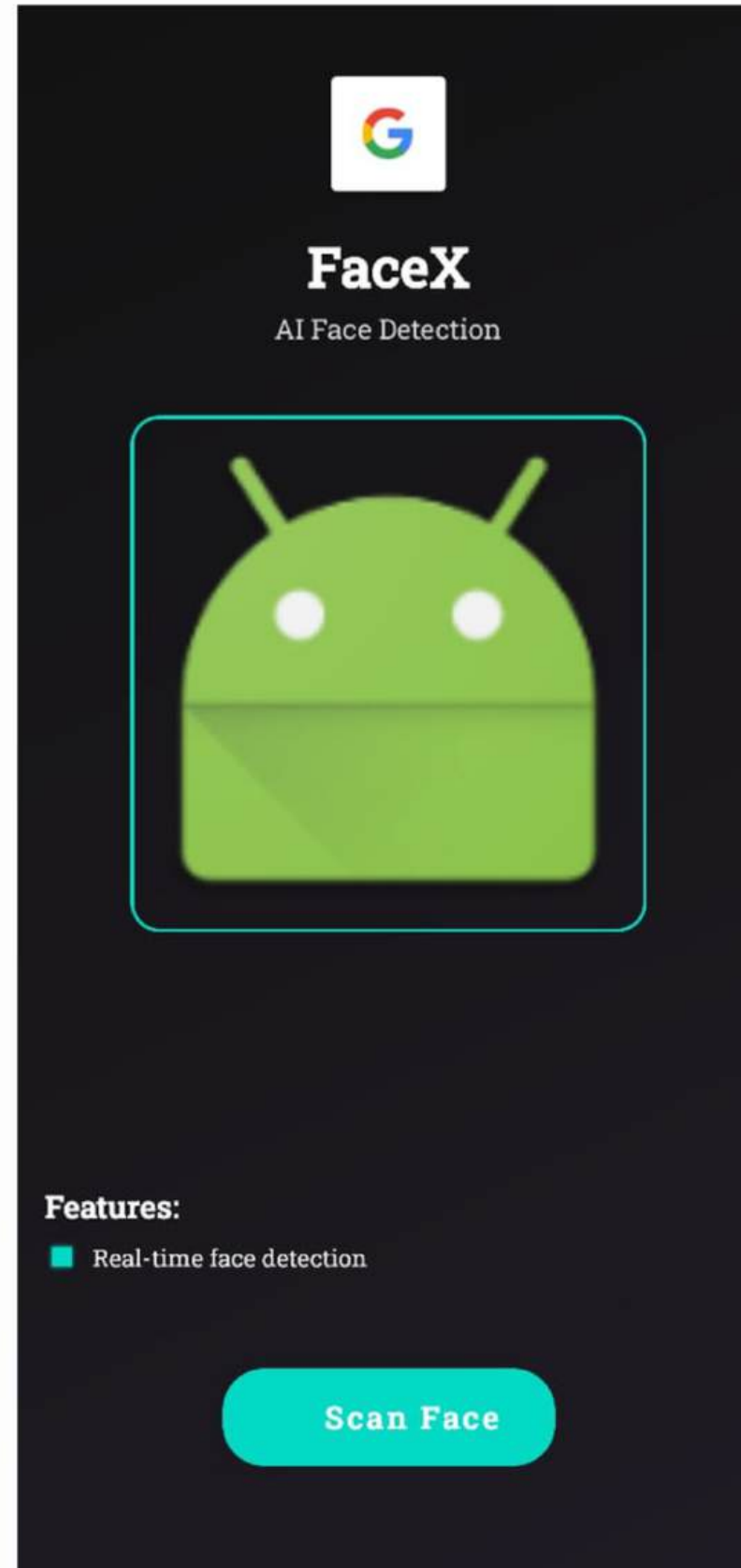
Our Team

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