

Team InSight

Vision for Blind

Team Members:

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PROBLEMS FACED BY VISUALLY IMPAIRED PEOPLE



IT IS ESTIMATED THAT AROUND 285 MILLION PEOPLE IN THE WORLD ARE VISUALLY IMPAIRED.

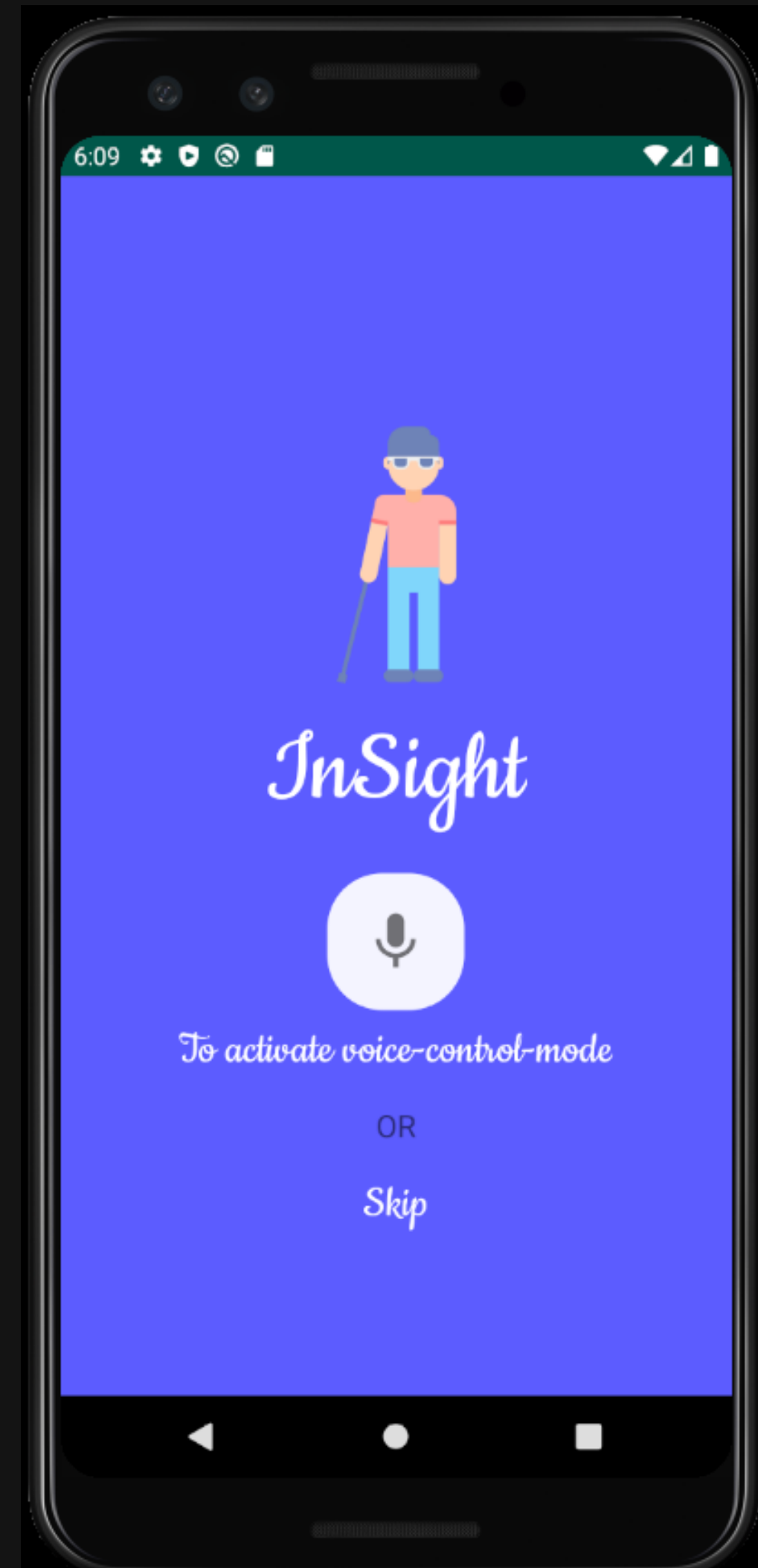
THEY ARE PRONE TO ROAD ACCIDENTS AND ARE NOT AWARE OF ANY DANGER AROUND THEM.

THEY ARE NOT ABLE TO READ & UNDERSTAND ANY TYPE OF WRITTEN TEXT, BILL, CURRENCY DENOMINATION.

THEY ALSO FACE DIFFICULTIES IN REACHING THEIR DESTINATION PROPERLY AND AT TIMES THEY DETOUR FROM THEIR ACTUAL PATH.

Introducing InSight

- SINCE THE PROBLEMS FACED BY VISUALLY IMPAIRED PEOPLE ARE NUMEROUS AND MOST CURRENT AVAILABLE SOLUTIONS ARE EITHER TOO OBSOLETE OR TOO EXPENSIVE TO ADOPT.
- SMART AI-BASED SOLUTIONS TO HELP VISUALLY IMPAIRED PEOPLE LEAD NORMAL LIVES WITHOUT SPENDING MUCH MONEY.

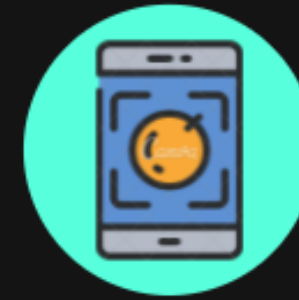
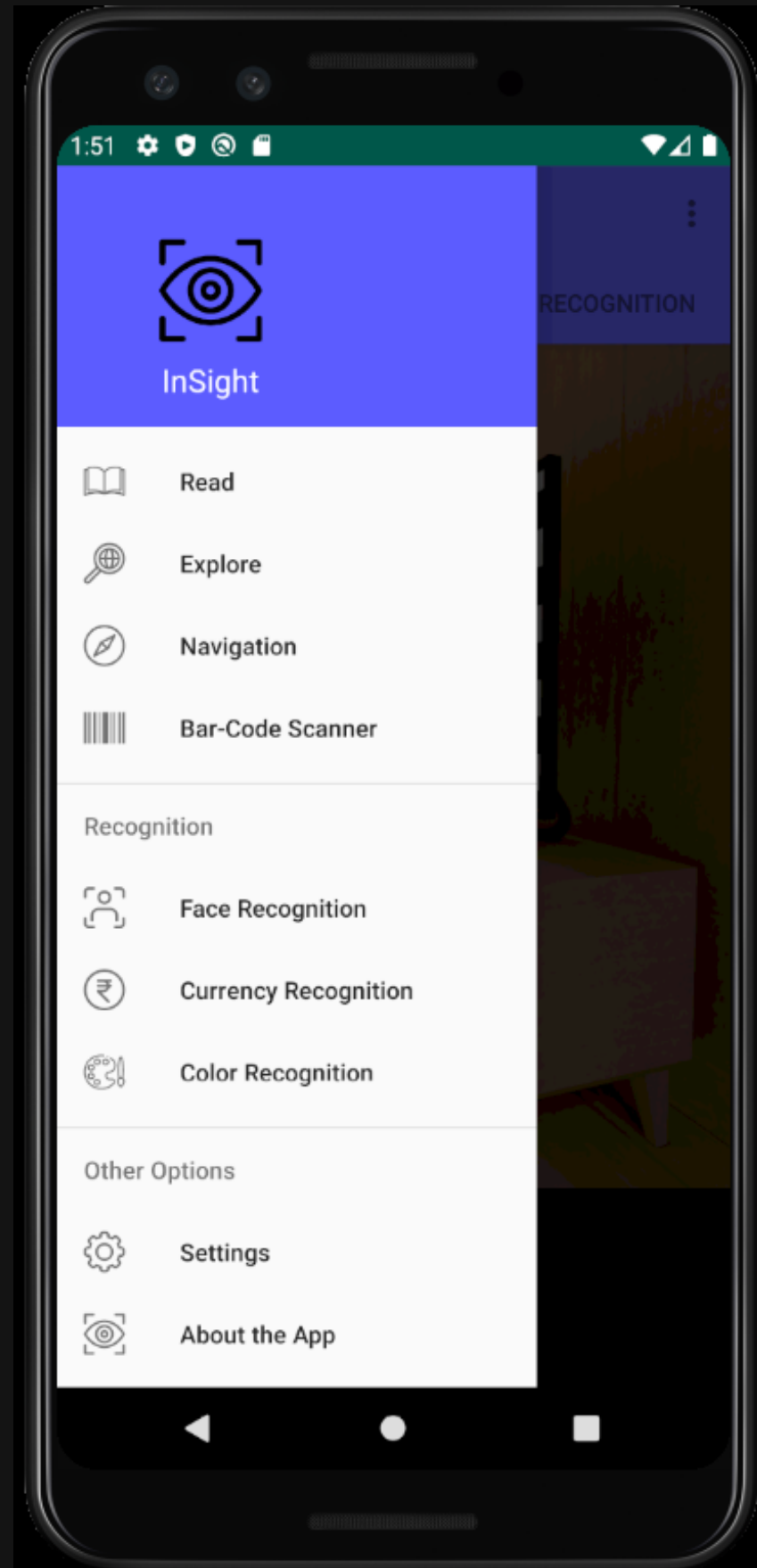


The Idea

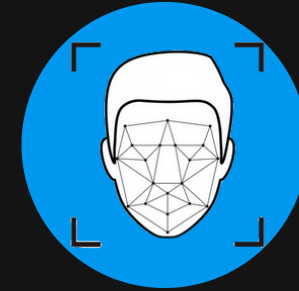
- Visual Support Glasses synced with a mobile application that will help visually impaired people live a better life
- Convert real time images to easy to understand audio format.
- Voice-controlled commands for easy accessibility.



Features:



Object Recognition



Facial Characteristics Recognition



Currency Recognition



Safe Navigation



Text Recognition



Color Recognition

Tech Stack:

COMPUTER LANGUAGE:

- Python(for deep learning) and Java (for android application).

DEEP LEARNING FRAMEWORK:

- PyTorch/Tensorflow

IMAGE PROCESSING LIBRARY:

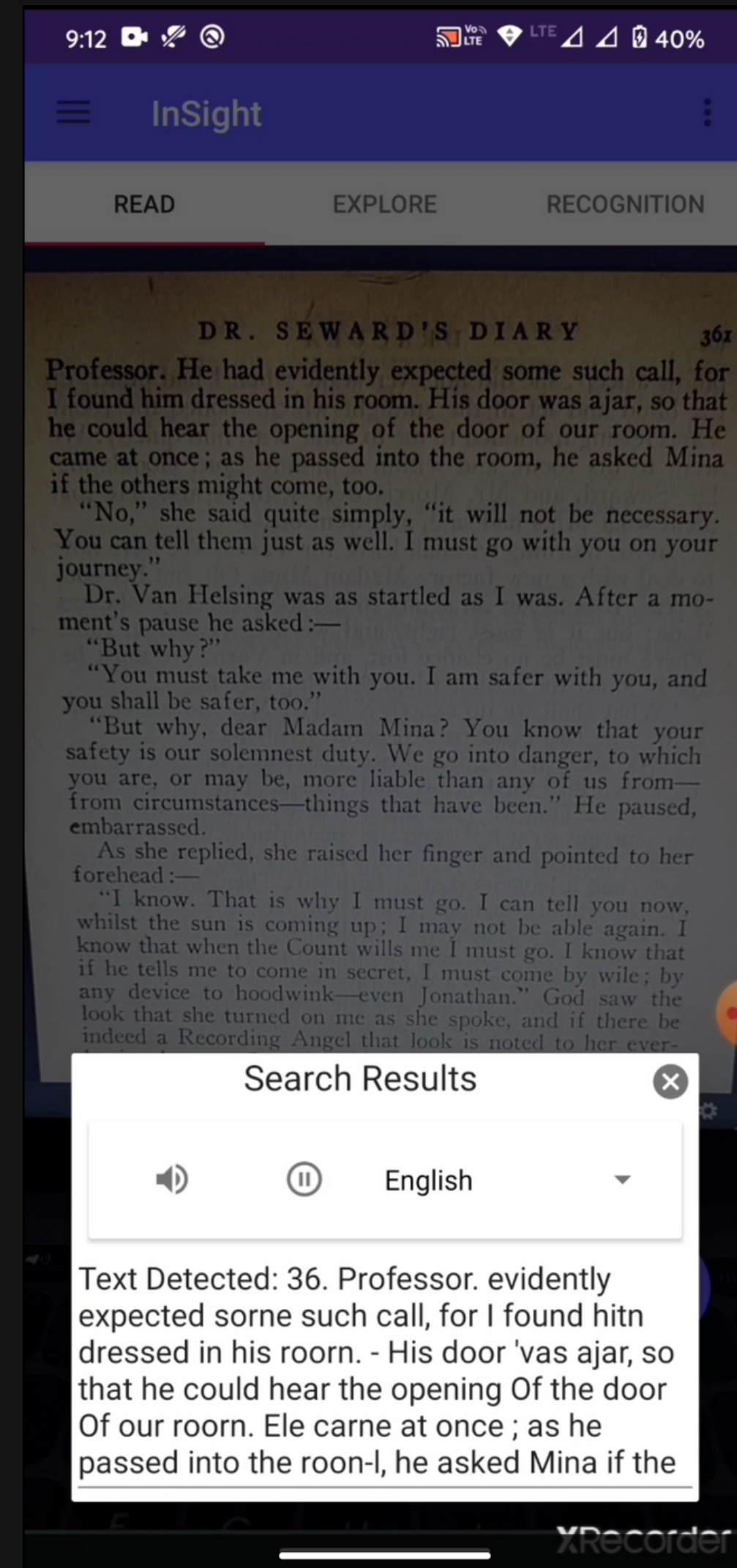
- OpenCV

ANDROID DEVELOPMENT IDE:

- Android Studio

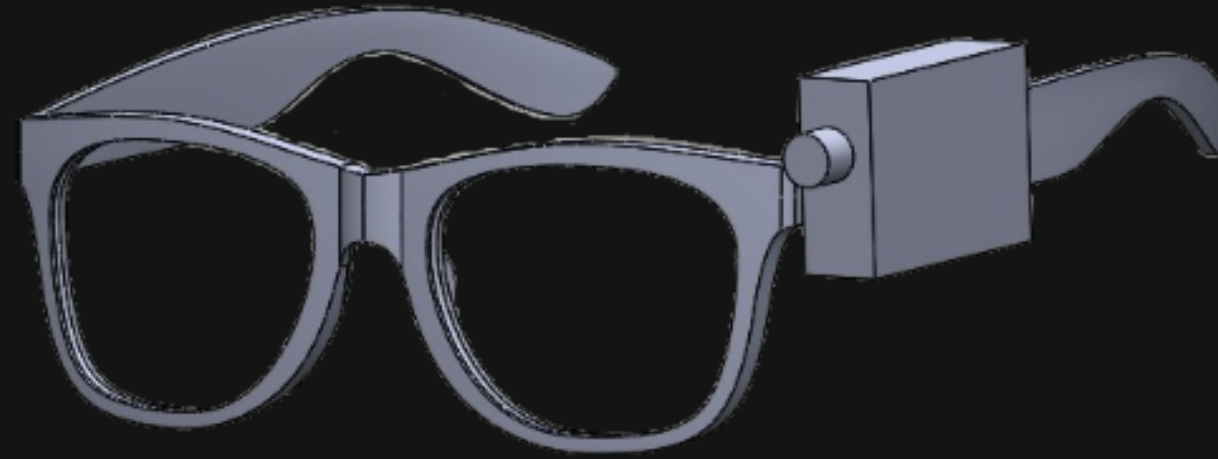
OTHERS:

- Google Text to Speech and Speech to Text, Solidworks, Microsoft CV API, Microsoft Face API.

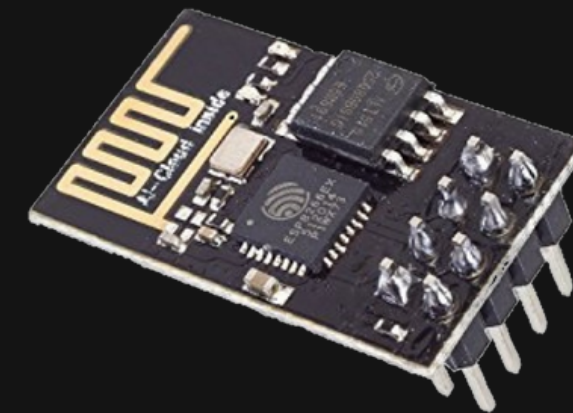


Hardware Integration

- Raspberry Pi
- Raspberry Pi Camera Module
- ESP8266
- Haptic Motor
- Raspberry Pi Night Vision Camera
- Microphone speaker
- Haptic Motor
- Ultrasonic sensor
- GPS module



Camera module



ESP 8266

Revenue Model

Features	APPLICATION	BASIC ₹4000	HOUSEHOLD ₹5000	NAVIGATION ₹10,000
OPTICAL CHARACTER RECOGNITION	✓	✓	✓	✓
OBJECT RECOGNITION	✓	✓	✓	✓
COLOUR RECOGNITION	✓	✓	✓	✓
CURRENCY RECOGNITION	✓	✓	✓	✓
FACIAL EXPRESSION RECOGNITION	✓	✓	✓	✓
SAFE NAVIGATION				✓
HARDWARE PRODUCT		✓	✓	✓
HAPTIC RESPONSE		✓	✓	✓
SPEAKER ASSIST			✓	✓
CLOUD STORAGE				✓
INSIGHT STICK			✓	✓
LIVE CAMERA			✓	✓

Future Development and Additions

Easy Detection

- A feature that will focus on the particular part of the image where the user is interested through pointing a finger, etc.
- Also, store familiar faces and inform when the same person revisits.

Hearing Disability

- A feature that will convert the voice of some other person into text which can be easily read and understood by a person with hearing disability.

Speaking Disability

- A feature that will detect the sign language of the person with speaking disability through the camera and then convert it to text or speech so that it can be easily understood by some other person who doesn't understand sign language.



THANK YOU!

Team InSight

