# A Smart AI Assistant for Blind People

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**Abstract-The requirement for free living is perceived in the present cutting-edge world for blind people who face the essential issue of social disconnection. They experience weird conditions with no manual help. Since most errands depend on visual data, individuals who are visually impaired are in a tough spot since they come up short on important data about the territory. This concept is proposed to help those individuals who are visually impaired or outwardly hindered by utilizing image recognition, AI, and Image and Text Acknowledgment. It is presently conceivable to stretch out the help given to individuals with visual impedance because of late improvements in comprehensive innovation. This consensus will be acknowledged by an android application that permits blind individuals to see and save individuals' faces, see objects before them, get the voice of text in objects, OCR, see the consequence of text and URLs, interpret rules to different dialects, video call, and snap a photo of the individual's GPS area to track down them with fingerprint authentication by Artificial intelligence and Machine Learning.**
**Individuals without vision will want to utilize the innovation's establishments and interface with the landscape successfully through this strategy.**

**Keywords: Artificial Intelligence, Machine learning, Image recognition, Text Acknowledgement, fingerprint authentication, GPS tracking, Voice of Text, OCR.**

## I.INTRODUCTION

In our social order, many individuals are experiencing unique infections or impediments. On the planet, countless individuals of different age ranges who are outwardly impeded assessed to be 285 million, and out of the 39 million are visually impaired agreeing to WHO. These individuals might be from foundations such as ranchers, educators, athletes, maids, housewives, and more.
Visual hindrance presents extreme outcomes on certain abilities connected with visual capability:
I. The everyday exercises (that require a dream at a normal distance)
ii. Discussion, perusing, and composing (which requires an exact vision and normal distance)
iii. The following action includes a lengthy consideration of optical perception
iv. Text Outline,Text interpretation
v. GPS tracking
A few applications are used in this task; however, certain limits are expected to be improved. Openness to visual information has extraordinary importance for further developing freedom and security of outwardly impeded and blind people since Artificial Intelligence is expected for helping their environmental elements route particularly in new spots. Because of the availability of enormous volumes of information and better calculations, presently it is simple for preparing the PCs for different items discovery and characterization in a picture with higher precision that helps outwardly tested people. Consequently, for defeating these issues which are experienced by ostensibly tried individuals thus for overcoming these issues which are capable by apparently debilitated individuals this application is encouraged that will offer assistance and convenience to debilitated individuals this application gives object text affirmation and revelation of face for the ID of people, items, and text.

## II. LITERATURE SURVEY

Dipankar Gupta et al. [1] fostered a computerized individual collaborator with Bangla voice order and the discovery of faces for impeded people. The cross-connection strategy incorporates Bangla voice order and executed the undertakings according to the characterized pre-set order. The client is empowered by a mouse cursor-controlling framework given facial developments for getting to the PC framework all the more helpful. The drawback of this paper is that it just performs given the pre-characterized orders. Subsequently, it can't be capable of conveying the normal outcomes depending on indistinct voice orders.

SyedMohidul Islam et. al. [2] discussed a framework that is close to the introduced framework. This presents an improvement methodology of Bangla menial helper 'Adheetee (Educated)' for PCs and advanced mobile phones that performs various kinds of functionalities of brilliant gadgets. Different calculations are used for distinguishing proof and answering according to the orders.

Fostering the 'Olivia' [3] as a menial helper for changing an ordinary home into a savvy home is the fundamental objective of this paper. This framework can be empowered with electronic home apparatus joining capacities in a restricted range. The restricted functionalities like playing jokes, making quips, weather conditions updates, and performing various estimations given voice order in English are executed.

V.Chayapathy [4] introduced an individual partner improvement is introduced that can help the clients to associate with home apparatus by signal and discourse. This framework works given English discourse acknowledgment and also, empowers the clients for acquiring specific query items through web rejection.

Ruler Bose et al. [5] demonstrated a voice-controlled framework in the English language for outwardly tested people. The functionalities like News entrance perusing, weather conditions gauging, email sending, and getting are carried out. The Google discourse Programming interface (Application Programming Point of interaction) is used to give the capacity of discourse acknowledgment.

Progressively Article Discovery Application by Selman To sun [6], the outwardly debilitated individuals will want to perceive the hindrances while they are strolling out and about utilizing the criticism which they will get in the type of sound and this will assist them with forestalling potential mishaps. The activities are performed utilizing the inbuilt sound and the camera modules. This application has various modes for both indoor and outside transportation, voice criticism is an or more.

## III.PROPOSED SYSTEM

### 5. *PROBLEM DESCRIPTION*

Blind individuals run over various difficulties in regular day-to-day existence from perusing a book to strolling in the city. Albeit many apparatuses are accessible to address the difficulties confronted by them, however, they are not adequate. Vision is the most fundamental thing a human can have and it plays an extremely fundamental job in the existence of an individual whether an individual can see or not. Outwardly tested individuals need an associate in any event, for working a typical everyday schedule work. In this paper, we have talked about the difficulties looked by blind individuals and attempted to give a good answer for them for working regular daily existence.

### *B. SYSTEM ARCHITECTURE*

In light of headway and development, the android application is promising to connect with the outwardly hindered academic individuals while liberating them from their reliance on visuals by giving them information through application.

The principal point is to offer better functionalities that can cause to some extent blind individuals to use it for acknowledgment, recognizable proof, route, and accomplishing the data about the external world

Fig.1 illustrates, Plan of the computerized reasoning colleague system and it depicts the connection of various structure modules for voice-over conversations in this structure the modules are picture subtitling object discovery face acknowledgment, and perusing the text in this entire structure a client could talk with the item through the discourse to-message interface module. The Google library (recognition of speech) for Flutter will be used for these reasons. For giving the result of the framework to the client and affirming the contributions of a client, the perceived result text will be played back to the client by the text-to-Speech module of Flutter.

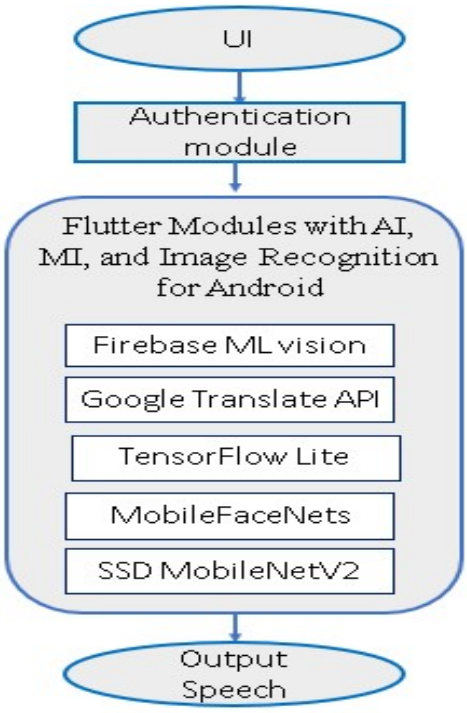


Fig.1: System Architecture of AI Assistant.

*C. MODULES*

1. Firebase ML Vision

The firebase_ml_vision and firebase core are used for face acknowledgment in an image and the image picker is used to pick the image from the camera or show and another source. Our point is to pick the image from the presentation using the button or from the camera and a short time later show that image thus with a human face recognized.

2.TensorFlow Lite

TensorFlow lite is a phase for the structure and getting ready mind organizations, which licenses recognizing and deciphering models and associations, intently looking at the learning and thinking used by individuals. TensorFlow's versatile design engages fashioners to send computations to no less than one focal processor or computer chip in workspaces, servers, or PDAs with a lone Programming connection point. It was at first advanced by trained professionals and creators working in the Google Cerebrum Group, inside the Machine Information research division, to lead Artificial intelligence and significant mind network research.

3. Google Translation API

Google Translate API to construct a Language Interpreter which can interpret one language to another dialect. Google Translate's NMT framework utilizes a huge fake brain network able to do profound learning. By utilizing a huge number of models, GNMT works on the nature of interpretation, utilizing more extensive settings to find the most pertinent interpretation. The outcome is then adjusted and adjusted to move toward syntactically based human language.

4.MobileFaceNet

MobileFaceNet produces top-notch face planning from the pictures utilizing profound learning structures like ZF-Net and Initiation Organization. Then, at that point, it utilized a strategy called trio misfortune as a misfortune capability to prepare this design.

5.SSD Mobile Net V2

The SSD-Mobile Net v2 object detection framework [34,35] is used to enable real-time object detection. Here, Mobilenet V2 is the base network called the feature extractor and is the object localizer. SSD-MobileNetv2object detection framework. The MobileNet feature extractor extracts the high-level features from the captured image stream and generates a feature map, which describes the important features needed for classification or detection tasks. The detection model, SSD uses the feature map and detects the class of an object and its location using a bounding box. The framework is trained to identify staircases, debris, and obstacles on the staircase such as humans and flower/plant pots.

## IV.METHODOLOGY

A Flutter application that utilizes Firebase ML vision, TensorFlow Lite, and in-build speech recognition and text-to-speech capacities to carry on like a third eye for blind individuals.

Fig 2,describes the flowchart of the modules.The app utilizes Firebase ML vision to distinguish human countenances, and TensorFlow Lite model executions of Mobile Face Nets and SSD MobileNetV2 to separately perform face acknowledgment and object detection discovery.

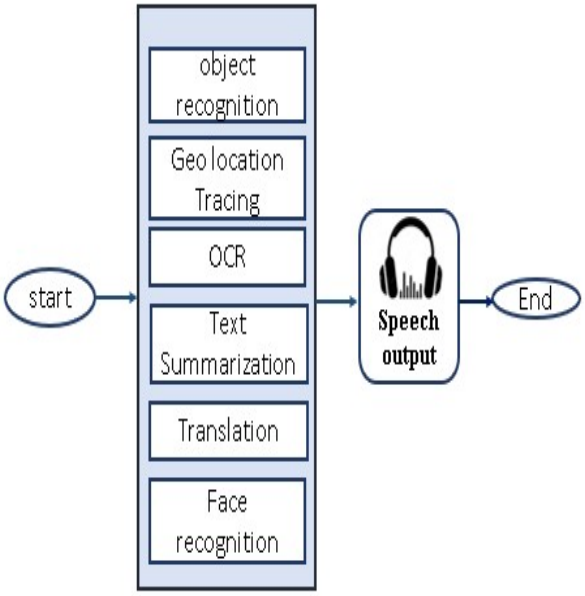


Fig.2: Flowchart of AI Assistant

The outwardly weakened client can affirm with finger impression, issue voice requests to perform face acknowledgment, Image recognition, OCR, programmed URL, and text summarization, translate languages, and send GPS area. The application replies appropriately through voice yield for each request given. The summarization API is worked with Flask, Sumy, and Trafilatura and is sent to Heroku. It utilizes Dormant Semantic Analysis (LSA) calculation for text outline.

The outwardly disabled client can use this application to identify and save human faces, recognize objects before him/her, get voice results of messages inside objects, sum up consequences of messages and URLs, make an interpretation of sentences to various dialects, video call, and send his/her GPS area for following.

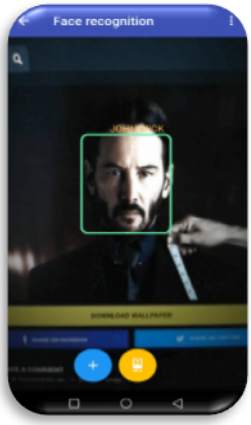


Fig.3: Face Recognition

## V.RESULT AND DISCUSSION


Fig.4: Object Detection

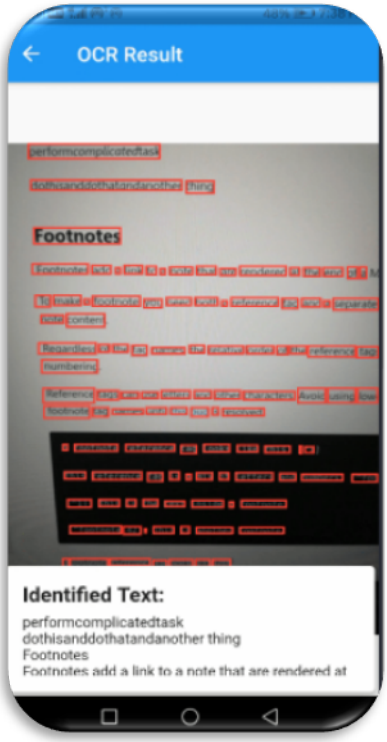


Fig.5: OCR

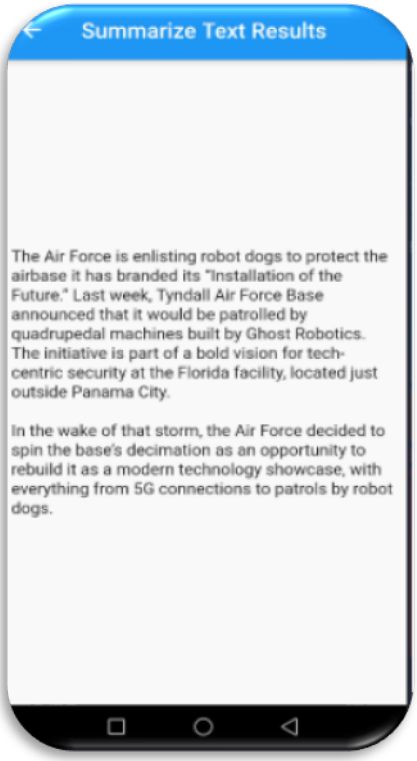


Fig.6: Text Summarization

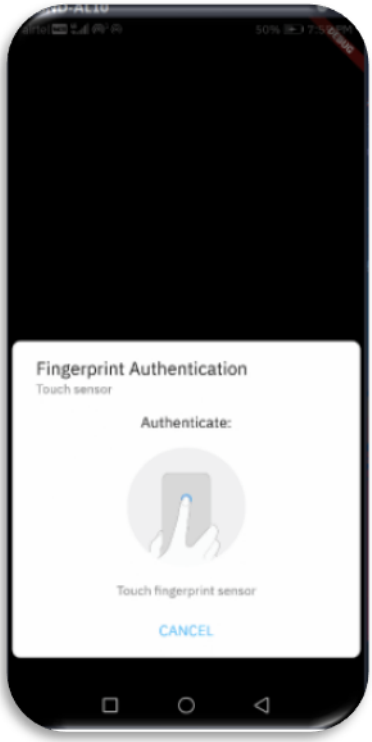


Fig.7 Fingerprint Authentication


Fig.8:Google Translation API

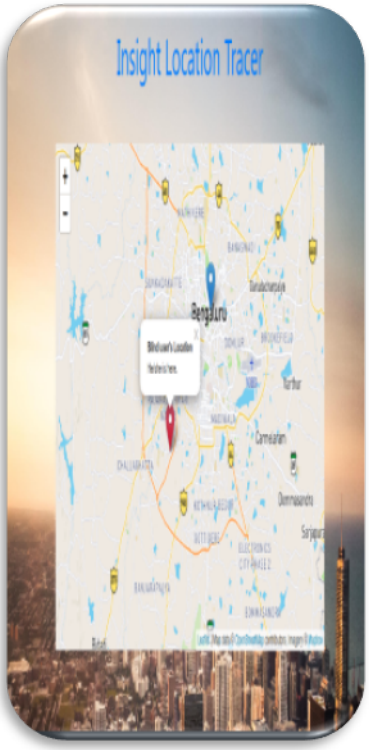


Fig .9: Geo Location Tracing

## VI.CONCLUSION

The android application utilizing a discourse-based menial helper framework is planned in this work for aiding and directing the outwardly weakened individuals for their everyday undertakings when required. A

particular arrangement is introduced in this paper for further developing the electronic availabilities for outwardly hindered people. The working arrangement of this menial helper is free and can't rely upon the console input from a client for expanding the simplicity of utilization and going for the gold problem-free insight to the client. Utilizing text-to-speech interfaces and speech-to-text interfaces, the client imparts and tweaks the framework. This framework contains six modules specifically Tap to speech, face detection, object recognition, text recognition, Text summarization, and GPS location tracingthat are right now executed. The product is filling in as a stepping stone towards Internet 3.0 in which all that is in view of voice orders. The menial helper offers a straightforward way for getting to the site by outwardly weakened people. The exhibited partner is a more noteworthy way for collaborating with sites and a compelling method for doing.

## VII.FUTURE SCOPE

In the future, the advancement of the proposed framework on the off chance that is finished can serve the outwardly tested individuals with superior aid. Before very long our proposed framework can be applied in a multilingual application so an individual can utilize the application in their language easily. In expansion, the proposed framework can be conveyed with the IoT. Upgrade to this framework should be possible by adding the highlights of cash acknowledgment. The existing philosophy for picture and protest acknowledgment can be finished with more exactness.

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