Project Idea Presentation

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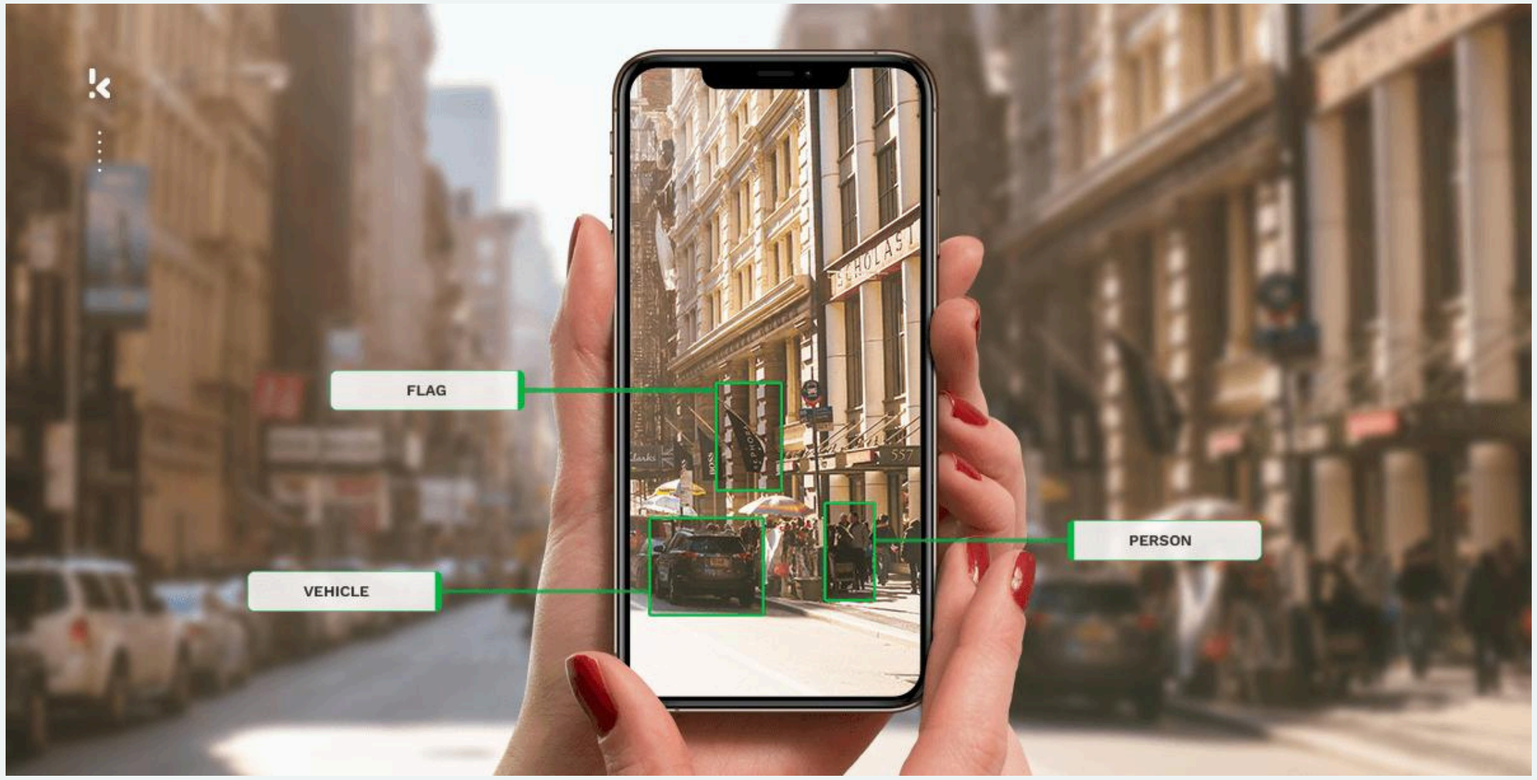
Tentative Title

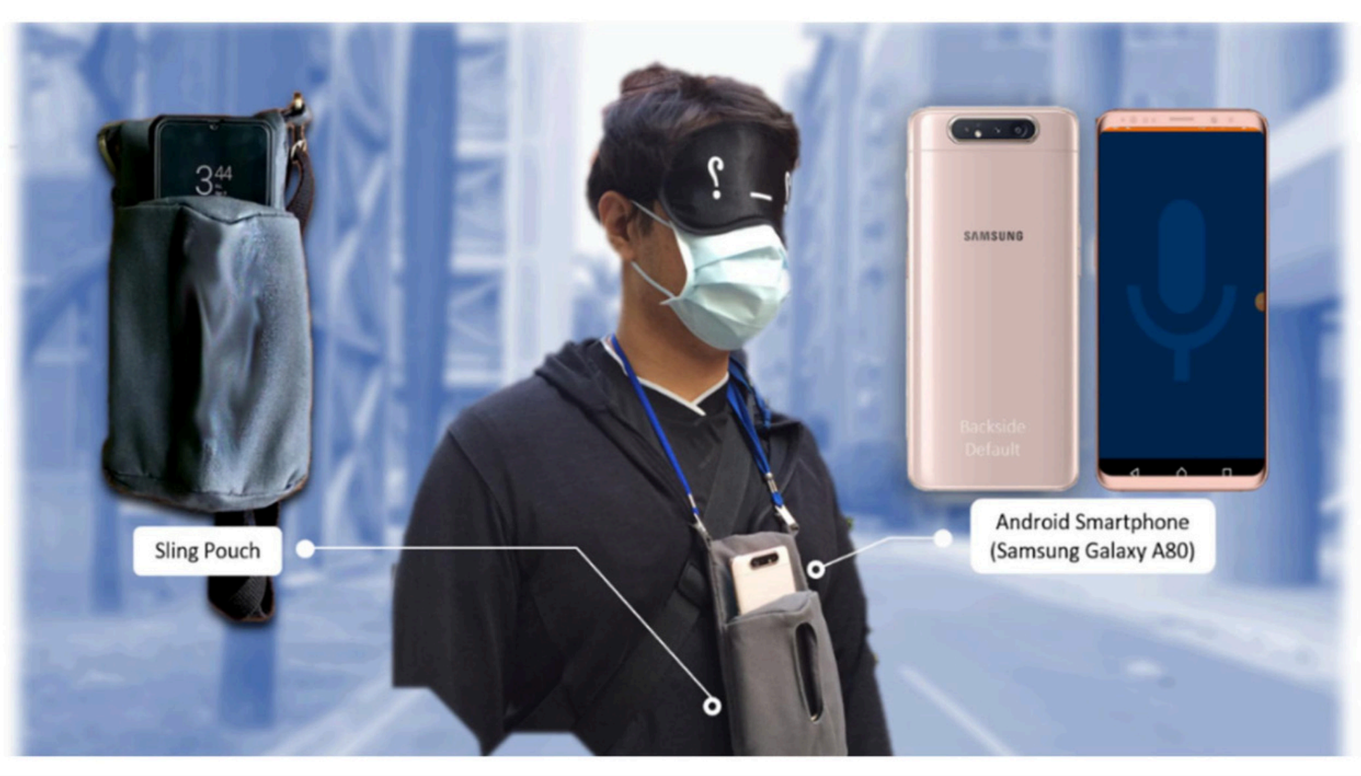
Real-Time Object Recognition and Navigation Assistance for the Blind using Mobile App

Introduction



This project proposes a mobile application that leverages computer vision and object recognition.

Introduction



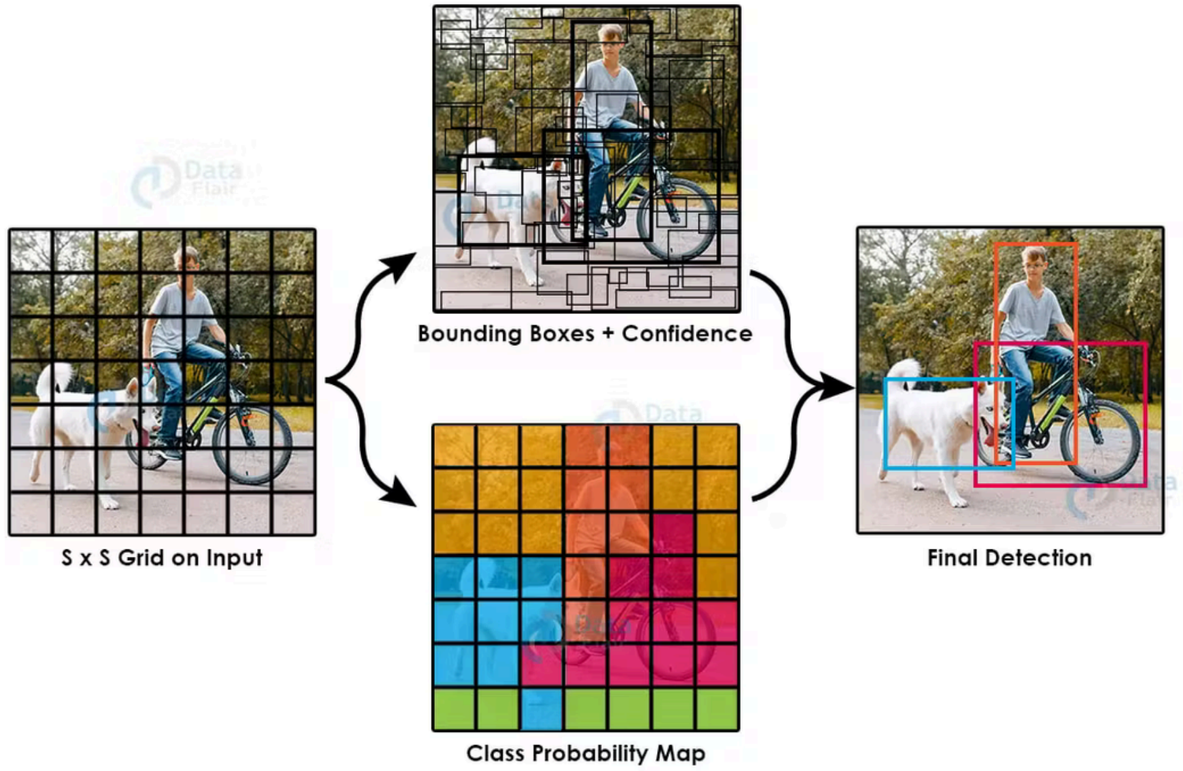
The app aims to provide blind users with real-time information about their surroundings.

Project Goal

- Develop a user-friendly and accessible mobile application.
- Empower visually impaired individuals with real-time object recognition and navigation assistance.
- Provide audio descriptions of objects, aiding in safe and independent navigation.

Methodology

1. Smartphone camera captures live video.
2. Video data streams to the server.
3. Server analyzes image frames and detects objects.
4. Server sends results back to the application.
5. Text-to-speech module generates audio descriptions for the user.



Methodology

- The application operates entirely on the user's mobile device.
- Launching the app activates the smartphone camera.
- The user can position the phone for optimal camera view (e.g., front pocket).
- Real-time video is streamed to a server for object recognition and analysis.
- The server transmits the results back to the application.
- Text-to-speech functionality relays information to the user via earphones.

Key Functionalities

- Real-time Video Processing: Capture and process live video for object recognition.
- Object Recognition: Deep learning models identify objects within video frames.
- Audio Description Generation: Generate concise audio descriptions using text-to-speech.
- Navigation Assistance (Optional): Future functionalities may include obstacle detection and path guidance.

Thank You