VisionAID

Comprehensive User Manual

Version 1.0.0

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Comprehensive User Manual for VisionAID

1. Introduction

Welcome to VisionAid!

VisionAid is a cross-platform mobile application designed to assist visually impaired individuals with navigating their daily lives more independently and safely. By using cutting-edge AI technologies, VisionAid provides real-time support through features such as reading text aloud, identifying objects, describing surroundings, and detecting nearby hazards.

While primarily created for the visually impaired community, VisionAid also serves caregivers, family members, accessibility advocates, and institutions working with people with vision challenges.

2. Getting Started

2.1. Installation

VisionAid is currently available for free on our website.

Scan the QR-Code below:

Or go to our website with this link:

https://visionaid.vercel.app/

We are working on publishing the app on the **Google Play Store** and **Apple App Store**, so it will soon be accessible on both Android and iOS platforms.

2.2. Opening the App

Once installed:

- Locate the VisionAid icon on your home screen
- Tap to open — no login is required

2.3. Onboarding

When you first open the app, you'll be guided through a short tutorial that introduces each core feature and how to interact with the app. This is screen-reader compatible and available in audio format.

2.4. Accessibility Compatibility

- Fully supports screen readers such as TalkBack (Android) and VoiceOver (iOS)
- Uses large touch targets, high-contrast UI, and voice feedback for easier navigation.

3. Home-Page Overview and Navigation

When you launch VisionAid, you are taken directly to the Home Page, designed with simplicity and clarity to assist users with visual impairments.

[Screenshot for thehome app]

The home page presents four main features as large, easily tappable buttons arranged vertically:

- ***Read Text*** – Point your camera at any printed or handwritten text, and VisionAid will read it out loud.
- ***Object Detection*** – Detects and announces nearby objects.
- ***Scene Description*** – Gives a high-level summary of what the camera sees (e.g., "a person sitting at a table").
- ***Hazard Detection*** – Alerts the user to possible obstacles (e.g., stairs, roadblocks).

Each button is:

- Visually distinct with icons and high contrast
- Screen reader-friendly with labeled accessibility tags

We have also integrated Gemini in this application. While VisionAid does not use Gemini as a traditional conversational assistant, it integrates Gemini's capabilities to enhance our speech recognition so that the user can easily navigate to certain features with ease.

4. Core Features

VisionAid has four core features that will assist users which are:

4.1. Text Recognition

The Read Text feature allows users to extract printed or handwritten text from their surroundings using the device's camera. This is especially useful for reading signs, menus, documents, and more.

How to Use – Step-by-Step Guide

- ✓ Tap the "Read Text" button on the home page.
- ✓ The camera will open.

- ✓ Point your phone at the text you want to read.
- ✓ Tap the capture button to scan the image.
- ✓ The app will process the image and display the extracted text on the screen.

4.2. Object Detection

The Object Detection feature helps users recognize objects in their environment by using the device's camera. It can identify common items such as bottles, chairs, bags, and more, making navigation and interaction with surroundings easier.

How to Use – Step-by-Step Guide

- ✓ Tap the "Object Detection" button on the home page.
- ✓ The camera will open, along with a microphone prompt allowing you to say the name of the object you are looking for.
- ✓ Point your phone toward your surroundings.
- ✓ Once the specified object is detected and identified, the app will lock onto it and provide guidance to help you locate it precisely.

4.3. Scene Description

The Scene Description feature gives users a summary of what the camera sees. This can include people, objects, environments, and actions — for example, "two people sitting on a bench in a park" or "you are in an office".

How to Use – Step-by-Step Guide

- ✓ Tap the "Scene Description" button on the home page.
- ✓ The camera will open.
- ✓ Point your phone at the scene you want to understand.
- ✓ Tap the capture button to take an image of the scene.
- ✓ The app will analyze the image and provide a textual summary describing the environment and key elements in it.

4.4. Hazard Detection

The Hazard Detection feature helps users stay safe by identifying potential obstacles or dangerous areas in their path. This includes things like stairs, curbs, open pits, barriers, or uneven surfaces.

How to Use – Step-by-Step Guide

- ✓ Tap the "Hazard Detection" button on the home page.
- ✓ The camera will open.
- ✓ Hold your phone facing forward and scan your surroundings as you walk.
- ✓ Tap the capture button or let the app auto-detect based on movement.
- ✓ The app will analyze the scene and alert you visually and/or audibly if a hazard is detected.

5. Tips for Best Performance

- **Lighting**: Use the app in well-lit environments to improve recognition accuracy.
- **Camera Handling**: Hold your phone steady and point directly at the subject for best results.
- **Voice Input Clarity**: Speak clearly and at a moderate pace when using voice-based input.
- **Keep Lens Clean**: Wipe your camera lens regularly to avoid blurry images.
- **Stay Updated**: Ensure you have the latest version of the app for new features and bug fixes.

6. Troubleshooting and FAQs

Here are the frequently asked questions and their answers:

Q: The app isn't reading the text correctly.

A: Try improving the lighting and repositioning the phone to better align with the text.

Q: Object Detection isn't finding what I asked for.

A: Make sure the object is visible and not obstructed. Try rephrasing or repeating the request.

Q: The app feels slow or unresponsive.

A: Restart the app or check for pending software updates.

Q: Is an internet connection required?

A: Some features may need an internet connection, especially for AI-powered tasks.

7. Accessibility Features

Reinforce VisionAid's commitment to inclusive design:

- Screen reader compatible: TalkBack (Android) and VoiceOver (iOS)
- Haptic feedback and audible alerts for non-visual guidance
- High contrast interface and large tappable buttons
- Optional voice navigation via Gemini (limited to speech-to-text)

8. Contact and Support

Website: https://visionaid.vercel.app/

Email Support: mailto:s0000003957@ud.ac.ae

9. About VisionAid

VisionAid was developed to empower individuals by integrating AI with accessible mobile technology. We believe in equal access, dignity, and independence for all.

Here are the team members:

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