AI-Powered Mobile Assistive Technology Apps

# Mobile App: SuperSense

Uses phone camera and AI to scan and read text, images from applications (mostly for text reading).

# Part 1: Introduction

## Setting up the app

1. Go to the App store or Google Play and install [Supersense](https://www.supersense.app/) on a mobile device
2. Complete tutorial provided in app

## Try out the app

## Go to Menu, Settings to make the following adjustments

## Turn on Flash Mode

## Adjust currency as needed

## Adjust speech rate as needed

## Change speech engine (language) as needed

## Complete three or more of the Supersense functions. The functions can be changed with the ‘T’ icon at the bottom right of your screen. Smart scanner should be chosen by default.

## You may try using this app at home or in the community

## Think about the app

1. Complete the worksheet below as you complete the tasks

## Support for the app

1. If you have any issues or questions regarding this activity, contact We Count research assistant, Ali Kazmi at [**akazmi@faculty.ocadu.ca**](mailto:akazmi@faculty.ocadu.ca)

## Worksheet

### App Tasks

Choose three or more of the following app functions. As you use the app, think about where AI is used and how data is handled and collected.

| **App Functions** | **Task Instructions and Suggestions** | **Task complete** |
| --- | --- | --- |
| **Smart Scanner** | * Turn the scanner on by pressing the play button to scan a new item * Press the stop button to stop reading or to start a new scan * Point phone camera on items in your home with text, bar code, or currency * Examples include business card, book cover, book contents, magazine article, currency bills, bar code, labels and instructions on grocery products * Try scanning items with a range of colours, contrasts, print style, patterns, upside down |  |
| **Quick Read** | * Point phone camera on items around your home that has short text * Examples include text on canned foods, medication, ingredient labels, nutrition labels, receipts, paper mail, playing cards, cards in your wallet, appliances (microwave, stove, thermostat, etc.) * Try reading things that have different fonts, different colours, printed on flat vs curved surfaces, holding with other hand vs placed on table |  |
| **Document** | * Point the camera on a full page of text and follow the audio cues to complete a scan * Examples include a page in book, magazine, instruction manual, website on a computer screen, utility bill or menu * Try scanning text of different sizes, colours, contrast, mixture of text and graphics, in different lighting environments, indoors vs outdoors |  |
| **Currency** | * Point the camera at different bills * Try holding or placing the bill against different backgrounds (i.e. light, dark, other printed material) * Try the different currency option |  |
| **Barcode** | * Point the camera at a barcode * Try scanning various items in your home with bar codes | ☐ |
| **Import Image or PDF** | * To use this feature, you need to have photos of with text saved or PDF files (i.e. flyers) saved in your phone * Select import a photo or import image from your device * Try taking photos of additional household items with different text format, colours and languages to import into this function |  |

### App Questions

Think about how AI and data is used in this app. You may use the following table of 10 questions to guide and record your reflections. Consider as many questions as you wish.

| **Reflecting on the App** |
| --- |
| Does the app function as intended? |
| Are there any unintended benefits in using this app? |
| Would this app benefit those outside the intended market? |
| What type of user data and information is collected to be able to use this app? Do you share data as you use this app? |
| Are users able to make changes to the app or provide feedback to the developers? |
| Do you feel the use of AI and data collected in this app improves the independence and quality of life for persons with disabilities? |
| Do you feel the use of AI and data collected is necessary? |
| Are there any ethical and fairness concerns with how AI or data is being used in this app? |
| Does the use of AI and data collected in these and other apps have a negative impact on persons with disabilities or hamper efforts to inclusion? |
| Do you have any other comments on the impacts of AI and data collected? |

# Part 2: Exploration of Artificial Intelligence through Assistive Technologies

## Short Answer Questions

Based on your experience with the app and activity, please answer the questions below.

### Impacts

1. How can these apps improve the quality of life for people with disabilities and support independent living?
2. How would this impact society in the way that we live, work, interact with people? How would it promote or detract from values inclusion and equality?
3. What are the risks and benefits that this type of technology would have on society and excluded groups? Are the apps “fair” in their collection of information and payment structures or are they exploitative? What are good approaches for AI and AT Apps?
4. Does the AI/AT meet diverse needs of the community it was designed for? Is it biased in its understanding of the target community and its needs?

From the CBC podcast: “*Science and technology has progressed faster than policy, and the ability for humans to keep up with ramifications. There are risks involved but we have to mitigate them as we develop this technology*.” says Roger Melko.

1. What role do governments, organizations, and citizens have in understanding these ramifications and contributing to risk mitigation policies?