Exploring AI to Empower People with Disabilities

# Mobile App: Ava

Uses natural language processing to transcribe conversations in real-time for the deaf and hearing impaired to participate in spoken conversation.

# Part 1

## Setting up the app

1. Go to the App store and install [Ava](https://www.ava.me/) on an iOS or Android device.
2. To learn about the features and function of this app, tap on Profile on the top left, choose Discover on the bottom right, select a function such as Face-to-Face, tap learn more on the top right corner to read more.

## Try out the app.

1. Complete two or more of Ava’s functions or have multiple conversations with the Face-to-face function.
2. You may try using this app at home with a person in your household or social bubble.

## Think about the app

* Complete the worksheet below as you complete the tasks

## Support for the app

* 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

The following table includes a checklist of four possible functions that can be completed with this app and suggested tasks for each function. Choose two or more of the following app functions, and check the Task Completed column. 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 Completed** |
| Face-to-face | * Tap on the microphone symbol at the bottom to start captioning * Try using this feature with various numbers of people, with music or TV turned on in the background, and in various environments | ☐ |
| Online Videos | * This function requires you to play a video on a computer * Place your phone with the transcription on while your video is playing * Try using this feature with a variety of online videos i.e. YouTube, Instagram, interview | ☐ |
| Type and talk | * In the Face-to-face function, tap on the keyboard symbol on the bottom right, type your speech and press send * Allow the app to continue captioning any audio conversation and use the keyboard to add to the conversation * Alternate between captioned speech and typed words * Try this feature with one or more communication partners | ☐ |
| Connect your microphone | * Use Ava with a Bluetooth microphone or earbud microphone for a hands-free experience * Try using this feature with various numbers of people, with music or TV turned on in the background, and in various environments | ☐ |

**App Questions**  
Think about how AI and data is used in this app. The following table of 10 questions are to help guide and record your reflections. Consider as many questions as you wish.

|  |
| --- |
| **Risks and Benefits of AT supported by AI and machine learning for people with disabilities** |
| Does the app function as intended? |
| Did you find the app beneficial in ways other than intended? How could this app benefit those outside it’s intended use? |
| 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? |
| Do you feel the use of AI and data collected in this app improves the independence and / or quality of life for persons with disabilities? |
| Is the use of AI and data in applications like this and elsewhere a useful approach for inclusion and accessibility? |
| Does the use of AI and data in the app create situations that are unsafe, unfair, or unethical? |

# **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.

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?

### **Addressing Impacts**

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?