



## **TED UNIVERSITY**

**CMPE 491**

**Senior Project**

**Gesture Guide: Virtual Assistant for the hearing-impaired**

**Project Proposal**

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**Team Members:**

- Berke Lahna
- Canberk Aydemir
- Ceyhun Toker
- Mehmet Fatih Ülker

**Advisor: Venera Adanova**

**Jurors: Gökçe Nur Yılmaz and Eren Ulu**

**Web Site: <https://cnbrkaydemir.github.io/Cmpe-491/>**

## Proposal

Over 70 million people use sign language as their first language, and they struggle on a daily basis with their communication due to the fact that the majority of people do not know how to communicate through sign language[1]. The Gesture Guide comes to the aid of these people by offering a completely new approach to accessibility applications.

The Gesture Guide project can be summarized as a virtual assistant for people with hearing disabilities. Gesture Guide project aims to create both a communication tool using sign language interpretation and a virtual assistant working with hand gestures as input. The primary problem gesture guide tries to solve is the communication problem of the people who use sign language as mentioned before. It solves this problem by providing a sign language interpreter which creates a communication channel between people who know sign language to people who do not.

The secondary problem the gesture guide aims to solve is the fact that people with disability of hearing cannot properly use modern virtual assistants like Apple's Siri. Modern virtual assistant uses a mixture of natural language processing and speech-to-text technologies, and they are targeted for users who have both the vocal capability and a good sense of hearing. Gesture guide aims to solve this problem by making the virtual assistant totally controllable by hand gestures. For example, users will perform a thumbs up gesture to open the calculator app rather than explicitly using their vocal cords. This way people with disability of hearing can get the benefits of virtual assistants while staying at their comfort zone using their natural way of communication.

By providing solutions to these problems mentioned, Gesture Guide can become a very valuable and meaningful project. In conclusion, Gesture Guide is the tool specifically crafted for people with disability of hearing which introduces new ways to communicate with people and interact with modern virtual assistants.

## References

1. Wise, J. (2023, April 16). *How many people use sign language in 2023? (U.S. & worldwide)*. EarthWeb. <https://earthweb.com/sign-language-users/>