

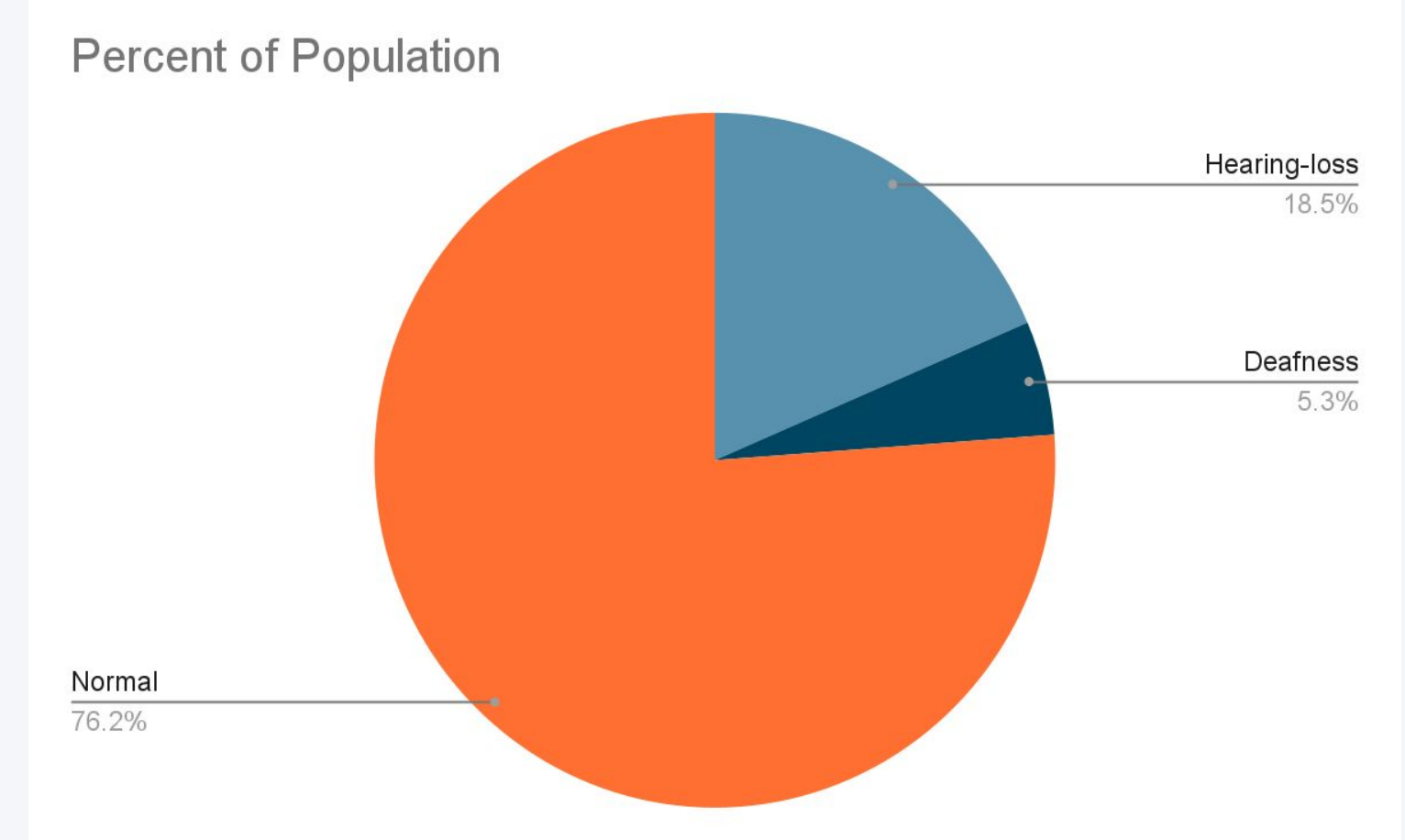
Diverse Sign Language Companion (D.S.L.C)

IP Application No. SA 1020241769

Problem Statement

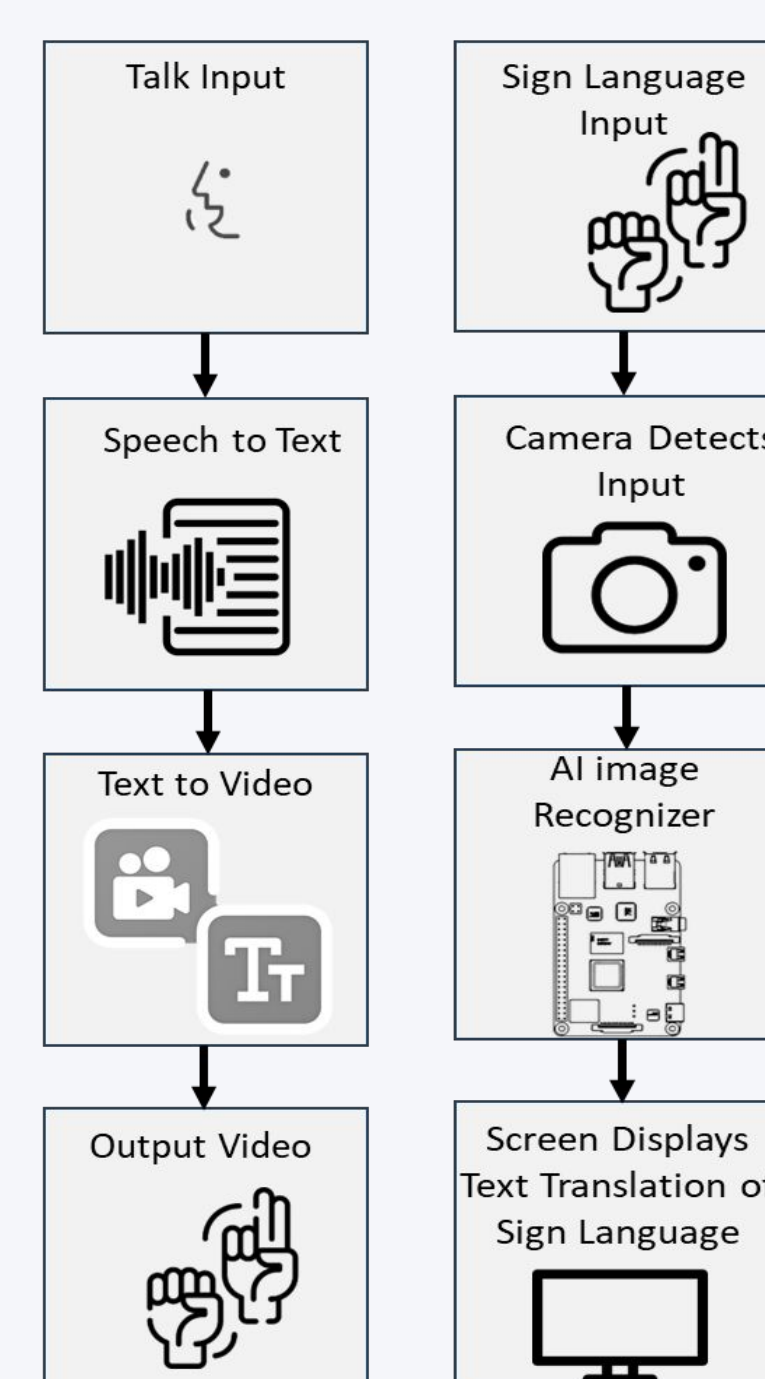
Realizing that our society isn't accessible to deaf people it is limited to only hearing people and most deaf people feel left out of the community.

- Currently 1.5 billion people some type of hearing loss and 430 million with deafness [1]
- By 2050 it's estimated that 2.5 billion people will have some type of hearing loss and 700 with deafness [1]
- Only 2.8% of adults know sign language [2]



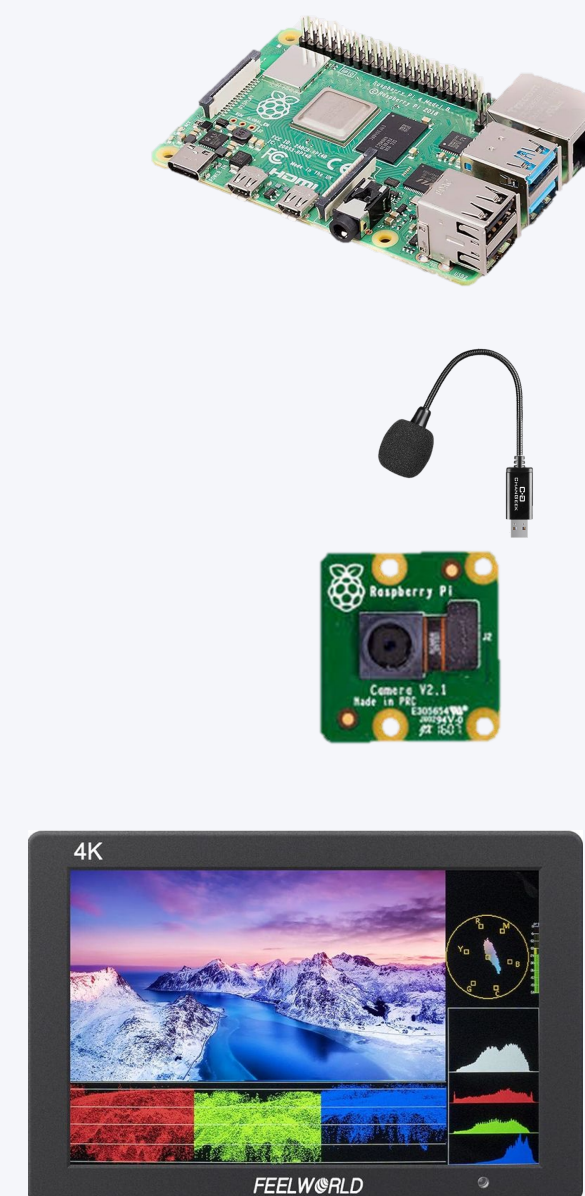
Invention Description

Revolutionize communication between the deaf and hearing communities with our cutting-edge device. Seamlessly bridging the gap, it employs state-of-the-art speech recognition to transcribe spoken words into text, while utilizing advanced artificial intelligence to interpret hand gestures, converting them into spoken words. Experience a new era of inclusivity and accessibility with our innovative solution.



The Technology Used

- Raspberry Pi controller
- USB Microphone
- Camera
- Built in Speaker
- 4K Display
- 3D printer for case, we used biodegradable filament for the project



Targeted Audience/ Scope

Our device targets deaf people who have trouble in communication with other people and hearing/blind people who would like to communicate with deaf people, our device aims to make the barrier between deaf people and blind people easier to cross and make it easier for teachers to teach students that have deafness and cannot be taught normally.

Future Work & Application

There are more than 300 different sign languages around the world [3], we hope to add all or most the different languages to our project to make our invention used world-wide.

We want to make a chip for making the device cheaper to manufacture.

We also want to make a 3d character for making the signs look more efficient.

We would also like to make the device compact to be more portable and become as common and easy to have as a cellphone.

References

- [1] World Health Organization. (2018). Deafness and hearing loss, Fact sheet N 300. 2015.
- [2] Mitchell, R. E., & Young, T. A. (2023). How many people use sign language? A national health survey-based estimate. Journal of Deaf Studies and Deaf Education, 28(1), 1-6.
- [3] Grote, H., Izagaren, F., & O'Brien, V. (2021). How to communicate with patients who are D/deaf or have hearing loss. bmj, 373.

Marketing

The cost of our device was about 290\$ and we are hoping to sell our device at an ideal markup of 55% which will be 450\$ and we are hoping to sell it to Hospitals and Pharmacies.

Results

We successfully developed a device that can capture sign language and convert it into spoken language. Furthermore, it can also convert any spoken language into sign language. We strive diligently to make it possible for the device to translate all sign languages into all languages of the world.