Technological Solutions for NZSL Translation

Significance

NZSL is one of New Zealand's official languages "There are approximately 4,599 deaf people who use NZSL as a form of communication, and approximately 23,000 people in total use NZSL" (Ministry of Social Development, 2022, para. 4). This technology will help with their ability to connect with society. It will help bridge the gap between those who use NZSL due to impaired hearing or verbal ability and the general population who don't understand NZSL

Important implications for society:

- To bridge the barrier in communication, which increases participation in society.
- Allows the person who uses NZSL to feel like they aren't left out, especially if the people around them don't understand NZSL or sign fluently.
- Businesses that serve customers can provide a more comprehensive service to their customers because they can communicate with each other. The technology can translate between NZSL and English.

Opportunities

We are looking to use technology better to facilitate the comprehension of NZSL by the broader population. "Sign Language Translation (SLT) is the task of translating videos with sign language into spoken language... It is an important research area that facilitates the communication between the Deaf and other communities" (Papastratis et al., 2021. p 13).

Simply being able to be understood is something we all take for granted, but it is not a luxury that we all enjoy Better development of SLT will decrease the likelihood of being misunderstood. This is particularly valuable when seeking medical treatment or in a potential emergency situation, but also effects such things as being able to do an interview, make a public address, participate in community meetings and groups, or simply being able to communicate with your child's teacher at a parent teacher meeting (Xia et al., 2022).

Due to communication barriers, the deaf and hearing impaired are severely limited in the amount of potential people with whom to form friendships and relationships. Further development and cost-effective implementation of SLT systems greatly increases the number of people that can understand and interact with the deaf and hearing impaired, thereby increasing social inclusion and improving emotional and social well-being

Risks

When dealing with any group classed as disabled a considerable concern is the possibility of discrimination. The most obvious form of discrimination is in the treatment of disabled individuals by other people in society. Less visible, but no less insidious is discrimination that happens systemically. In this case there is a risk of this happening across the board as decisions are made about how technology is designed, implemented and funded.

Wealth can be a discriminatory factor in accessing technology. The most accurate and effective technology available for SLT are physical devices, but these systems are expensive and out of reach of the everyday users (Puranik et al., 2022).

While industry is very effective at driving innovation due in part to the fact that it is profit driven and can attract higher funding levels, this can lead to proprietary technology that may have restricted access.

Inadequate capability of technology can result insufficient levels of accuracy which could result in misinterpretation and lead to misunderstanding.

Choices

There are a lot of considerations to be made in developing technology for SLT. Broadly these can be categorised as cost of development, profitability or value to the developer, accessibility to those that need the technology and cost to the end user.

There are very good hardware based solutions that have a very high level of accuracy. Some of these are not portable at all. Others require calibration to the individual user, and all of them are expensive (Puranik et al., 2022).

Target audience is a choice that industry must make as part of it's process. Making a product proprietary may benefit the company, but may also mean that it doesn't reach all those that it could benefit. Practical considerations mean inclusion of smaller markets like NZSL, can go by the wayside when a company evaluates the cost versus the benefit analysis (NHK Enterprises).

Costs go down when existing image interpreting systems like Yolo are utilised in product design. Utilising existing platforms like mobile phones makes scalability easier to achieve. These combined result in the most affordable systems for those in need.

Responsibilities

Zali

Website design and implementation

Research opportunities and risks

Lead presentation

Update shared document with findings and references

Logan

Project researcher

Research topic and choices

Make slides for the presentation

Update shared document with findings and references

References

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