Sign Language Translation

An Overview of the SignON Project

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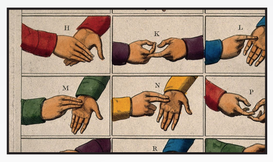
Introduction

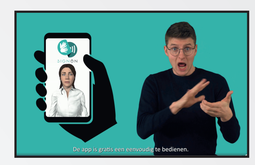
Sign Language

- Sign languages are the primary means of communication for over 70 million individuals
- But these languages are rarely included in ongoing NLP developments
- Lack of data and effective representation of signs



The SignON Project

- European funded Horizon 2020 project on machine translation between signed and spoken languages
- Wide consortium of different partners across Europe
- Four spoken languages (English, Spanish, Dutch, Irish) and five sign languages (LSE, BSL, NGT, VGT, ISL)



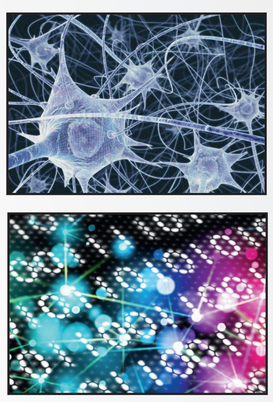
Model

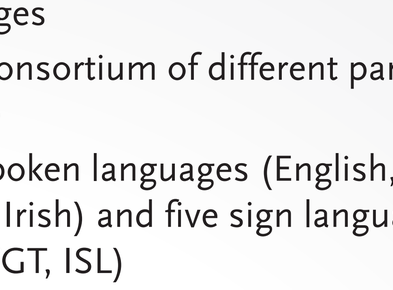
Components

- Sign language recognition, speech recognition, and text normalization
- Machine translation and natural language understanding, based on an interlingual representation
- Sign language synthesis, speech synthesis, and text generation

Interlingual Representation

- Main architecture: multilingual encoder-decoder transformer model (mBART)
- Complemented by symbolic representations (WordNet, Abstract Meaning Representation, language-specific logical structures for sign language)





Conclusion & Future Work

- Design of mobile application and discussions with stakeholder groups as an integral part of the project
- Aim for academic and technological innovations, as well as societal impact
- First release of the mobile application due in June 2022; final release and end of the project in December 2023

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