



Sign2Speech

The sign language has never been so
simple to understand!

Introduction

- Offer new means of communication between signing & non-signing persons
- Only 120,000 persons know the French Sign Language (FSL)



Gesture **recognition**
+ real-time gesture **translation**
+ web **chat** application
= **Sign2Speech**

S2S former project

2013-2014 RICM4 project by Arthur CLERC-GHERARDI & Patrick PEREA

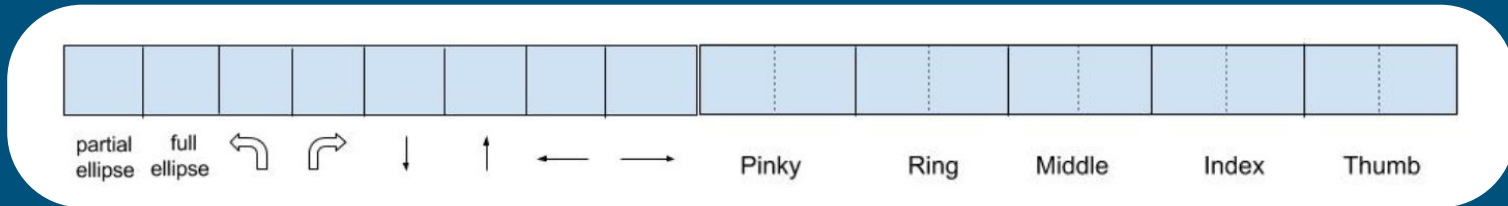
- Intel Perceptual Creative camera
- The Perceptual SDK no longer works
- Skype-inspired application, no WebRTC

Technologies and languages

- C++
- Intel RealSense Camera & SDK
- JSON
- WebRTC
- WebSocket

Project overview

- Recognition mode
 - Speak with sign language
 - Serie of gestures
 - Feedback of what you have done
- Learning mode
 - Add your own words
 - Use them directly after you added them

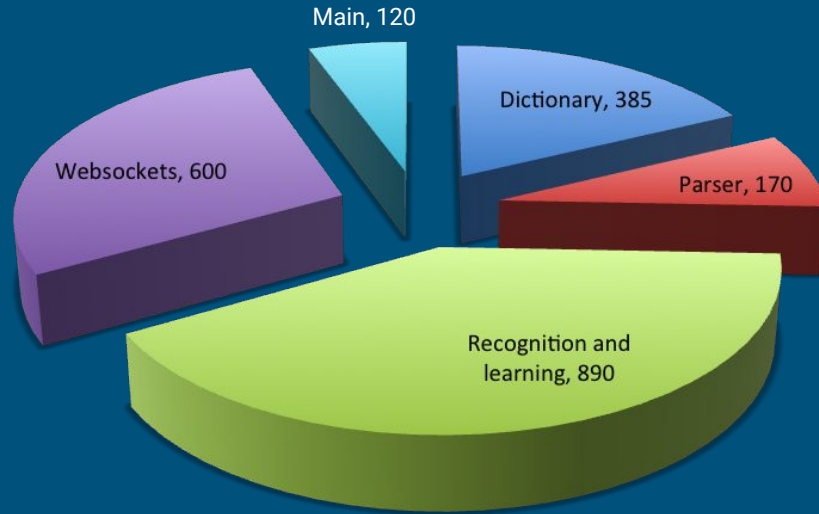


Project overview

- Chat application
 - Support to display subtitles
 - Communication between signing and non-signing people
 - Messaging functionality for non-mute people to respond to mute people

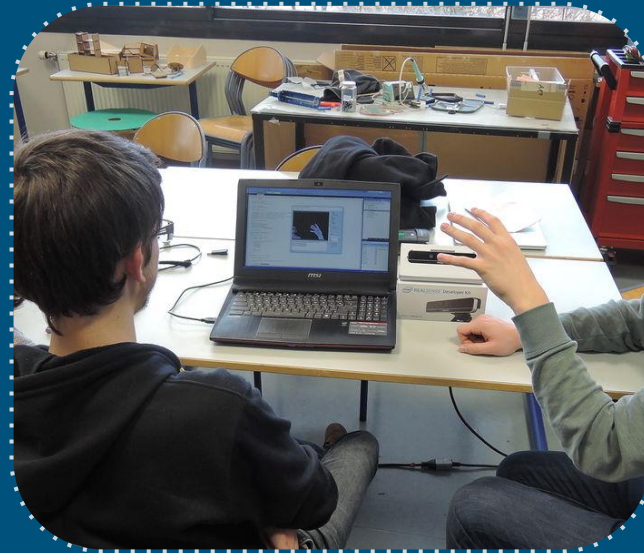


Number of code lines



Organization

- Fair separation of tasks
- 15 min meeting every week
- What is next

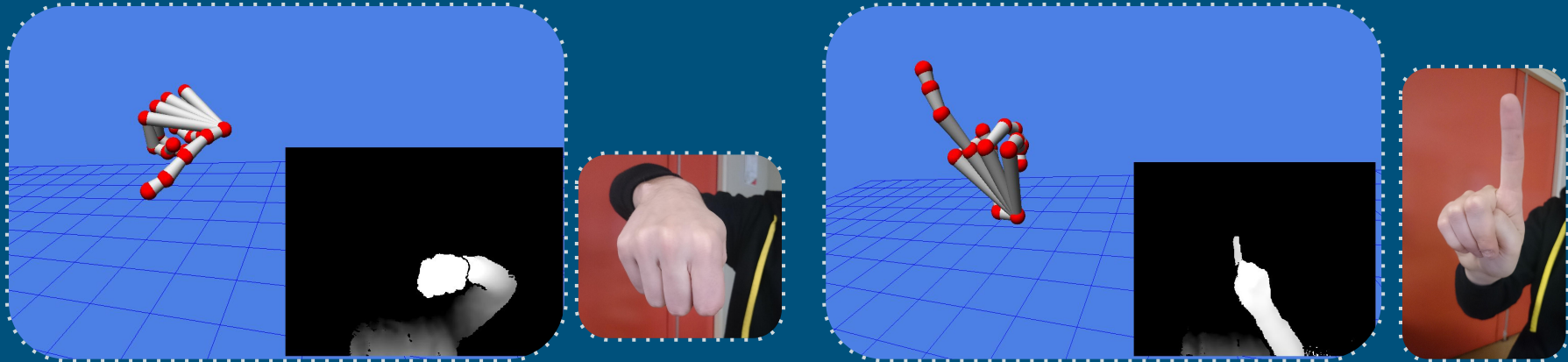


Limits of our application

- Optimal conditions of use
 - No bracelet, no ring
 - Works better with natural light than artificial light
 - Wear a monochrome top to contrast with the skin color

Limits of our application

- Lack of precision of the camera



Possible improvements

- Show the user's hand and tracking points in a window
- 2 hands
- Improve trajectories recognition
- In the chat, remove text messages and sign with a 3D model when a non-mute texts
- Use a new version of the camera with better precision
- Use a language model to improve the gesture recognition

Conclusion

- Learn new technologies
- Discover C++
- Improving project skills
- First approach of sign language

Thanks for your attention

