Augmented Reality Hand input mapping
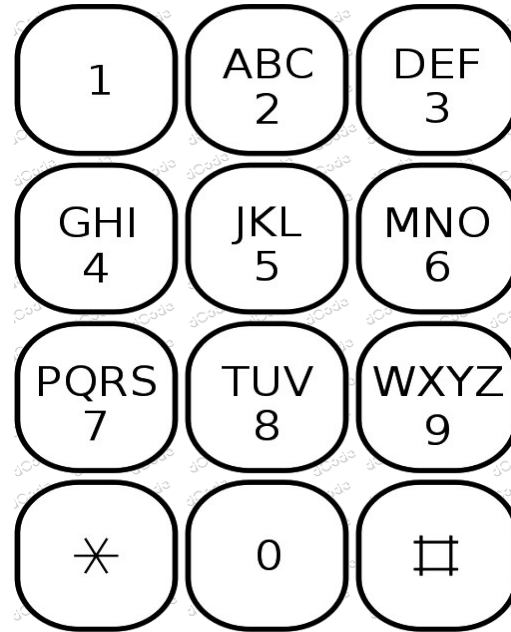
El Mehdi Khadfy, Belaid Abdellah

Current Augmented reality Input

- AR keyboard :
  - Ergonomic issues.
  - Tracking problems.
  - No haptic feedback.

- Voice Input:

  - Language & Accent barriers.
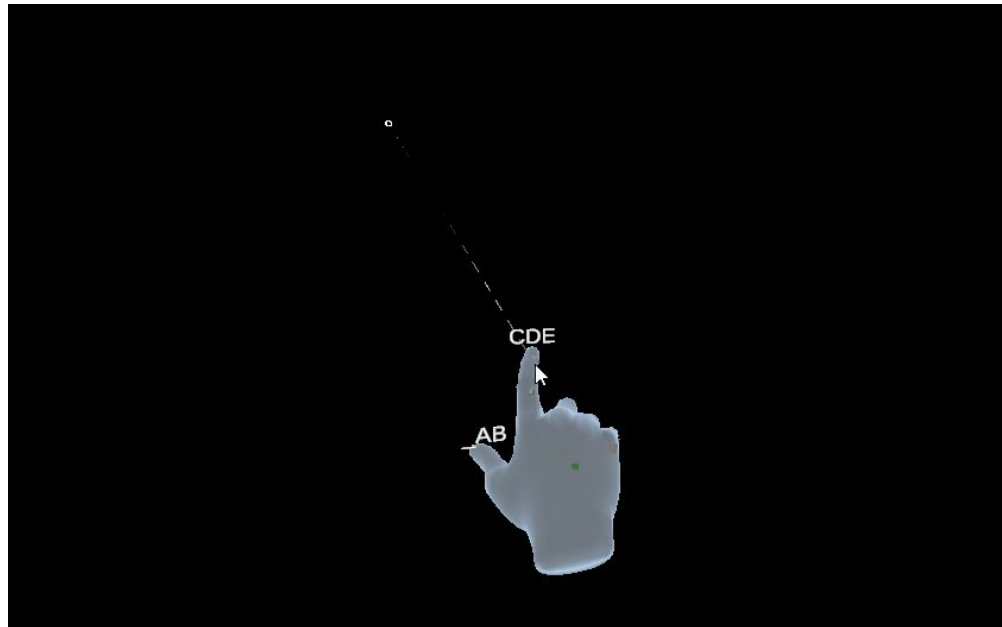
  - No convenient in public environments.

Concept

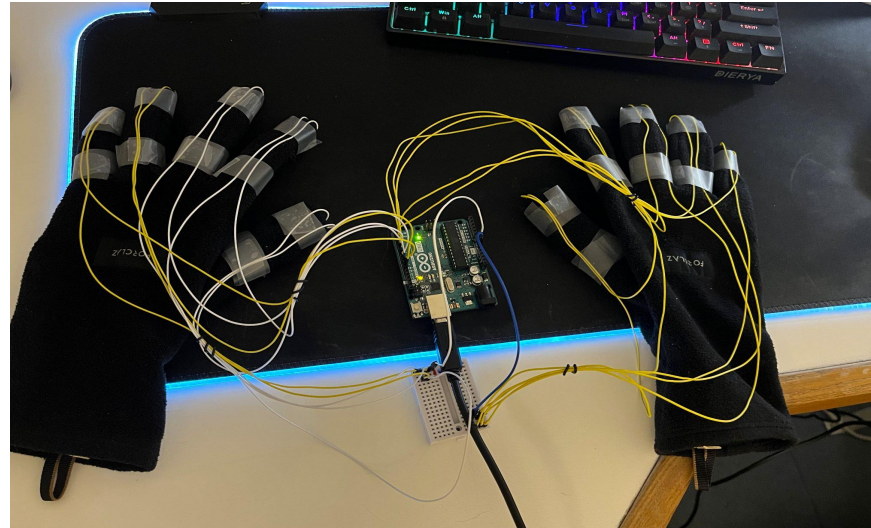- Finger mapping.

- Tapping détection.
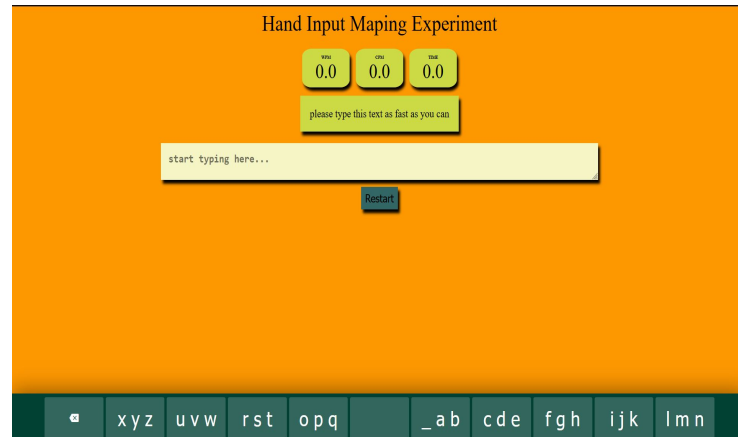
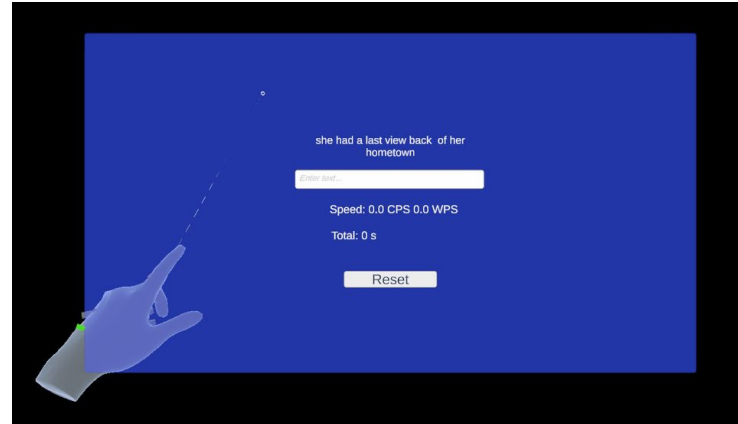# Concept

Prototype

- Sensors Choice.
    - ~~Choc sensor.~~
    - ~~Pressure sensor~~.
    - Buttons

- Mapping order.

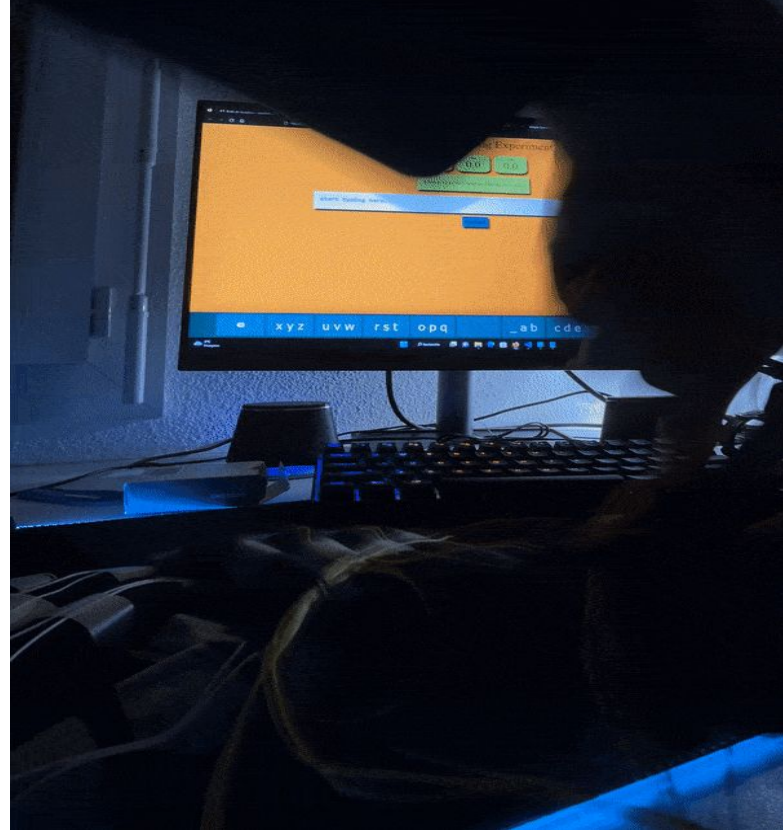   - ~~Azerty / Frequent letters~~ .

    - Alphabetical order.

Experiment Protocol

- 5 users.

- 5 sessions for training on the prototype.

- Test the two methods:
  - Finger-Mapping Glove.
  - Virtual Keyboard

Finger-Mapping Glove

Virtual Keyboard

- Leap Motion Device

- Touch Free software

Virtual Keyboard

Questionnaire

- Filled in the First session and In the Last One.

FeedBack

How comfortable was it to wear and use the glove during the study *

	1	2	3	4	5	
Very uncomfortable	◯	◯	◯	◯	◯	Very comfortable

How easy was it to learn and use the finger-mapping glove for text input *

	1	2	3	4	5	
Very difficult	◯	◯	◯	◯	◯	Very easy

How would you rate your typing speed using the glove in comparison to using a virtual keyboard *

	1	2	3	4	5	
Much slower	◯	◯	◯	◯	◯	Much faster

Which text input method did you prefer using during the study *
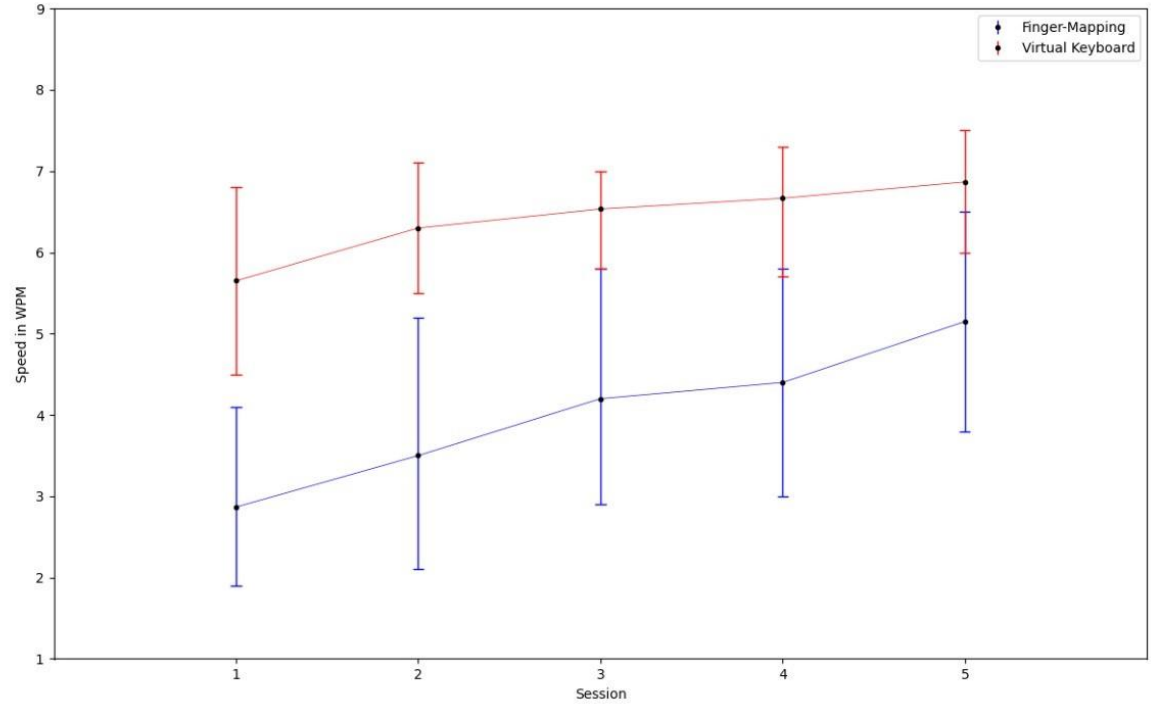
◯ Finger-mapping glove

◯ Virtual keyboard

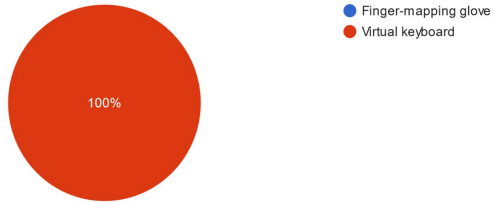Were there any technical issues or bugs that you encountered during the *

Results

- Long terme improvements.

Results : User Feedback

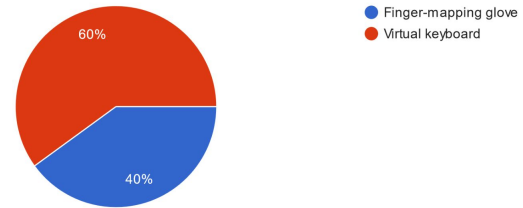Which text input method did you prefer using during the study
5 réponses

● Finger-mapping glove
● Virtual keyboard

100%

1st Session

Which text input method did you prefer using during the study
5 réponses

● Finger-mapping glove
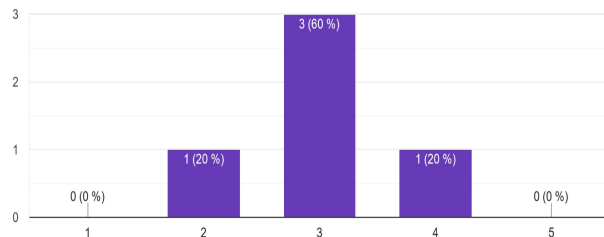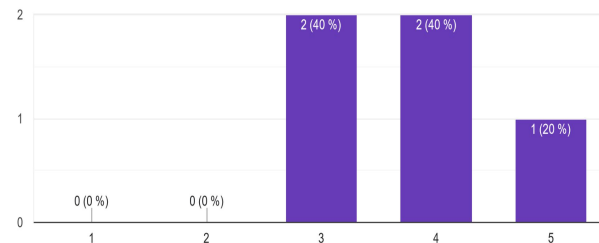● Virtual keyboard

60%

40%

Last Session

Results

How easy was it to learn and use the finger-mapping glove for text input
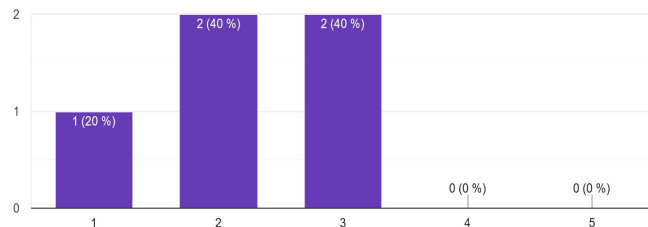
5 réponses

How easy was it to learn and use the finger-mapping glove for text input
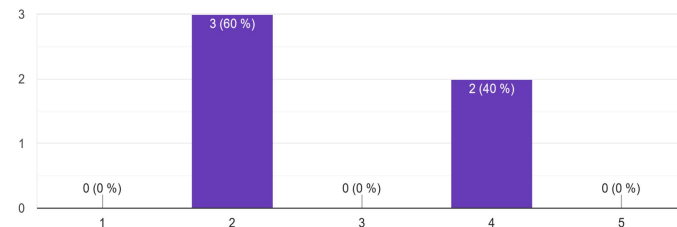
5 réponses

How would you rate your typing speed using the glove in comparison to using a virtual keyboard

5 réponses

How would you rate your typing speed using the glove in comparison to using a virtual keyboard

5 réponses

1st Session

Last Session

13

Conclusion

- Improvement Possibilities for the Hand Input Especially from a Hardware perspective.
    - Use of Pressure sensors …

- Promising results that may lead to a competitive input way in comparison to the floating AR keyboard with different possible extensions.

Thanks for your attention