

FUI 2018 Project E.A.T.

Eye Assisted Text (editing)

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Quick flashback



Concept

Text editing is established

Shortcuts

Power users have tools like VIM or Emacs.

Inaccessible to standard users

Eye tracking to accelerate the usage and limit hand movement

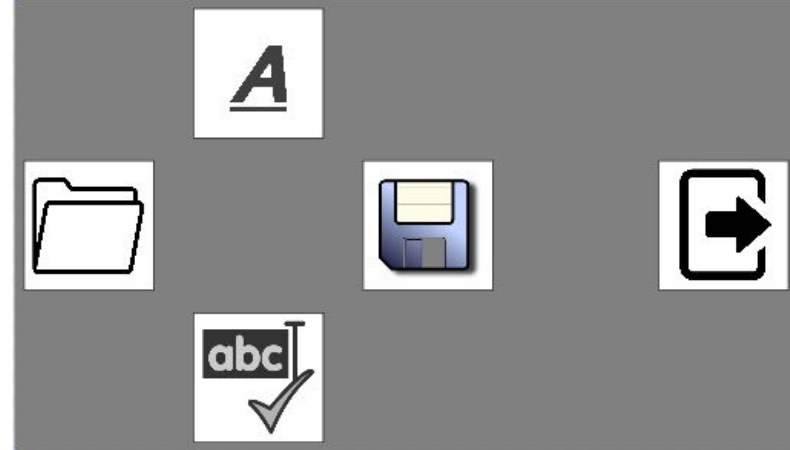
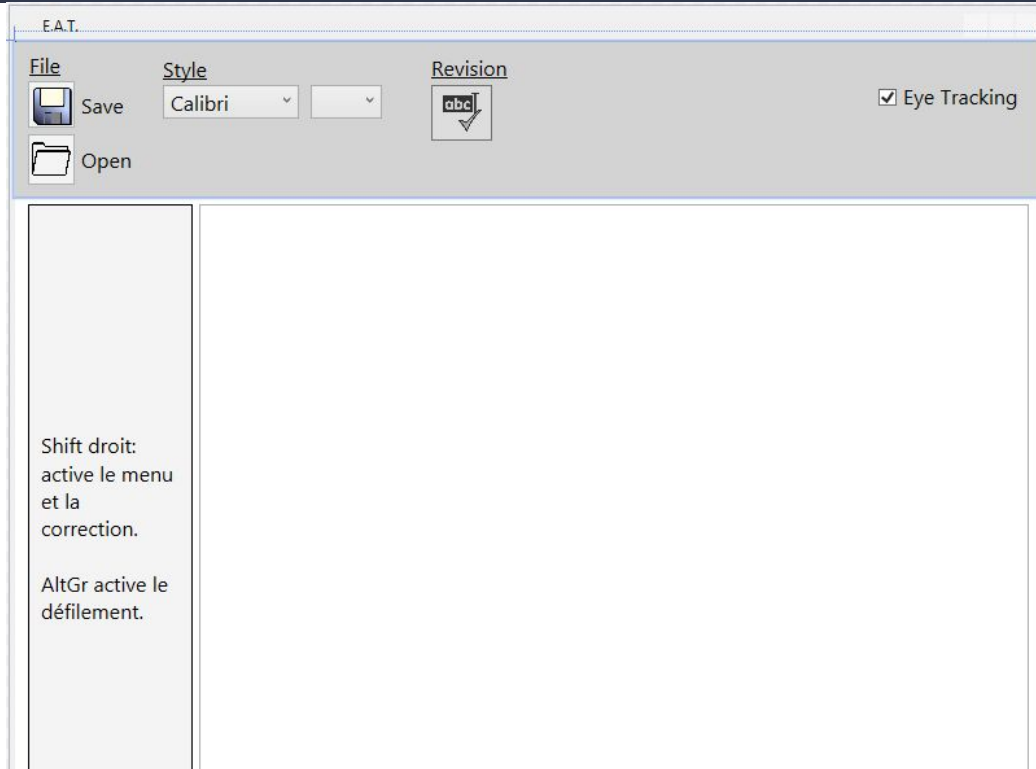
CASE model

		USE OF MODALITIES	
		Sequential	Parallel
FUSION OF MODALITIES	Combined	ALTERNATE	SYNERGISTIC
	Independent	EXCLUSIVE	CONCURRENT

The application

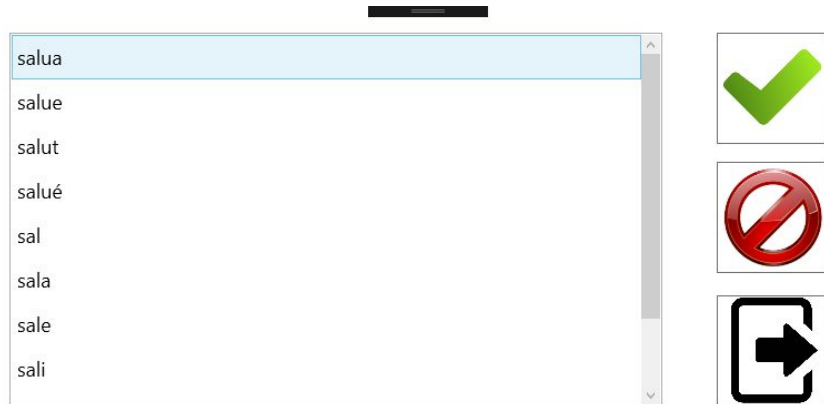
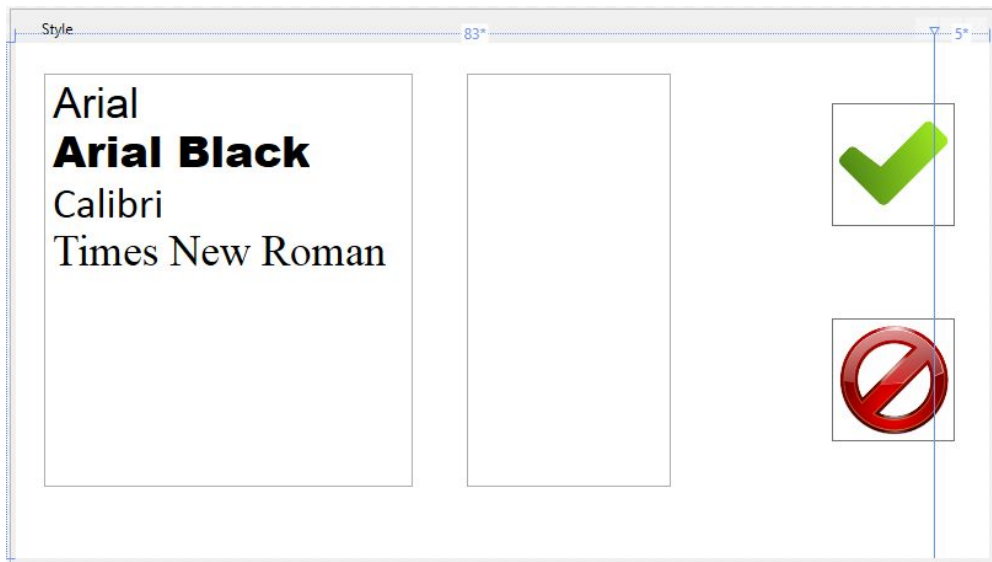


Implementation



/marom17/E.A.T.

Implementation



/marom17/E.A.T.

Demo



Experimental testing



Hypothesis

H0:

- There is no increase in speed by editing text with the eye tracker

H1:

- Editing text with eye tracker support is faster than without it



VS



2 test groups

One group begin with tobii, the other one with mouse.

In a second time, they exchange the devices.



Procedure

La cigale et la fourmi

Times New Roman 36

La cigale ayant chanté tout l'été

Arial 20

Se trouva for dépourvue,

Arial Black 20

Quand la bise fut venue

Calibri 16

Pas un seul petit morceau

Calibri 36

De mouche ou de vermisseau

Times New Roman 14

Elle alla crier famine

Arial Black 16

Chez la fourmi, sa voisine

Arial Black 20

Lui priant de lui prêter

Times New Roman 48

Quelques grains pour subsister

Arial 20

Je vous paierai, lui dit-elle

Arial 12

Avant l'août, foi d'animal

Calibri 22

Intérêt et principal

Calibri 16

Results

Mouse.Text
206
184
270
147
169
398
165
324

x = Mouse
y = Eye Tracker

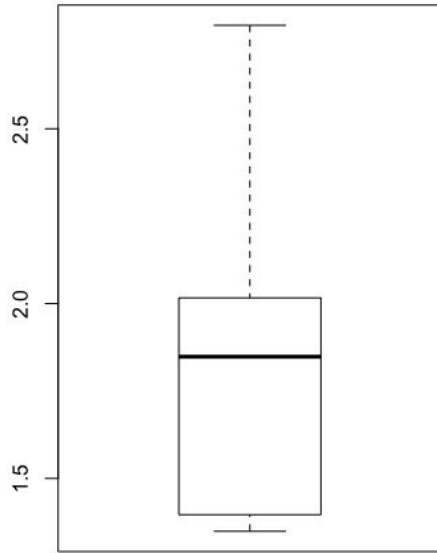
Welch Two Sample t-test
t = -3.4619, df = 13.545, p-value =
0.003984

mean of x mean of y
232.875 404.375

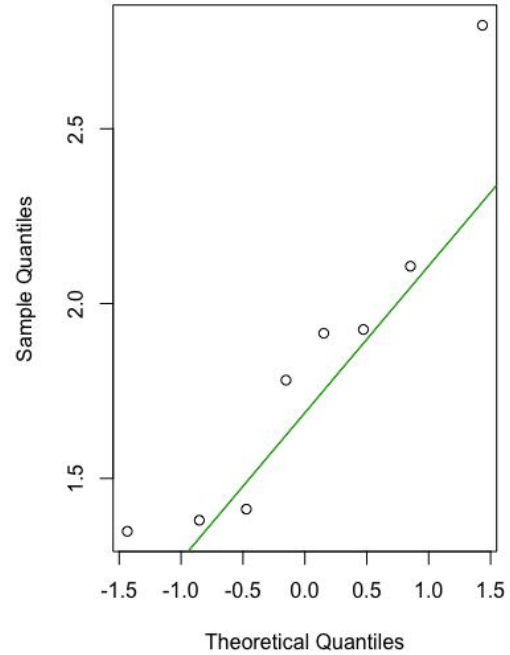
Eye.Text
434
254
520
411
301
562
316
437

Results

Ratio Eyetracker/Mouse for the editor

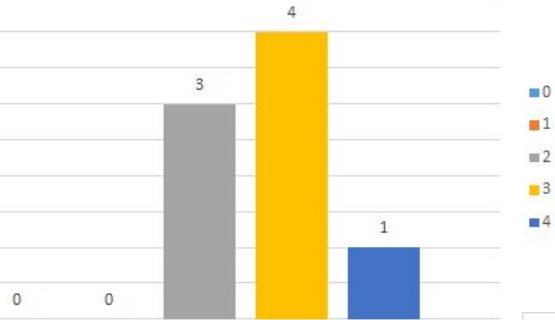


Normal Q-Q Plot

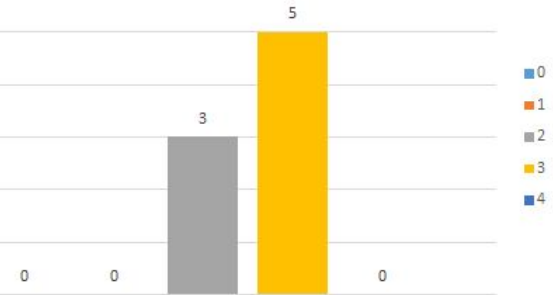


Feedback

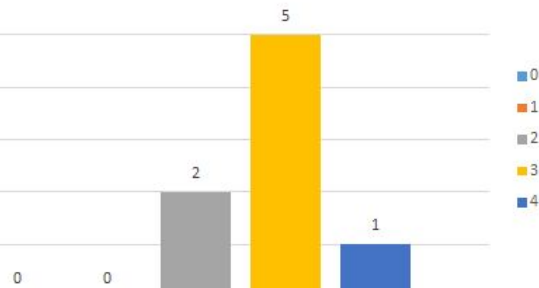
Easy Use



Speed



Comfort



Feedback

Do you think you can improve yourself



■ Yes ■ No ■ Maybe

Do you experience issues



■ Yes ■ No

Which system did you prefer



■ Keyboard-mouse ■ Keyboard-tobii ■ No preferences

Conclusion





Failure or success

Improvements

- Adapt the eye-tracked menu
- Better feedback
- Shortcuts

TIME

TO IMPROVE



Questions ?





That's all Folks!