Keyboard with tactile feedback on smartphone touch screen

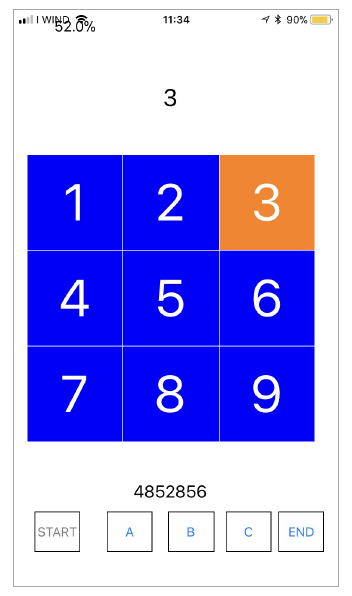
vibration haptic feedback keyboard

【Summary】：

The paper developed a numeric keypad that can provide tactile feedback through short-term vibration of the phone.

【Method】:

Crossing the boundary of the key 5 causes a short vibration, which is useful for entering or exiting the key with a finger. We call this vibration boundary feedback. For example, sliding a finger from key 8 to key 5 from bottom to top will generate a short vibration when crossing the lower boundary of key 5, and then continue to slide toward key 2, and the same feedback will be provided again when the boundary is crossed. The left and right buttons 4-5-6 on the horizontal line and the horizontal line sliding from top to bottom also apply.



【Conclusion】：

We described the design and implementation of a haptic keyboard on iPhone7 which provides tactile feedbacks when crossing the borders of key 5 and when inputting any digit. We ran a test with 34 users, not described here, that showed how tactile feedback can help finding the position of keys and inputting numbers without looking at the smartphone screen. In the conference demo users will test the interface as above, and discuss their experiences.

【Subjective analysis】：

**Advantage:**

A virtual numeric keyboard based on iphone's vibration feedback is designed to give different feedback when swiping through different keys, and then click the required key to complete the input. In this process, the user is provided with edge feedback and key feedback.

**Disadvantages:**

Just experiment on the numeric keypad. Unable to verify, if you can get good results on a keyboard with more keys.

**Next:**

Apply to QWERTY keyboard or nine-key typing.

【Important Reference】:

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