

Write timing: ZoomBoard works for smartwatch text entry (w/ video)

April 30 2013, by Nancy Owano



(Phys.org) —If you did not hear it from somebody else, you probably asked the same question yourself: What would I really do with a smartwatch, if it's for viewing only, when I need something for text entry too? Viewing is only half of the equation, when you need to find the location of a school or key in any urgent instruction. After all, text input on a watch screen? No way? Way. A Carnegie Mellon team has come up

with a concept translated into something called ZoomBoard, a keyboard that zooms when you tap it. ZoomBoard enables text entry on ultra-small devices, such as a smartwatch screen, using what the team calls "iterative zooming" to enlarge tiny keys to a size that is comfortable for the user.

Their goal is to make it possible, and easy, to type on something so small as a smartwatch screen. The tiny keyboard is QWERTY style. When you tap any key it can magnify the letter to make sure your fingers have control over the desired character.

The agony in learning new text-entry systems is not in the pressing down of letters and numbers but in what to do for space bars, deletes, and such. ZoomBoard's navigational steps are easy. There is a built-in space bar or you can [swipe](#) to the right to insert a space or to the left to delete. Swiping upward reveals symbols. Capital letters can be typed by pressing and momentarily holding a key. The number of zoom levels can be set, convenient for those with impaired vision or problems with motor control.

The creators authored a [paper](#) "ZoomBoard: A Diminutive QWERTY Soft Keyboard Using Iterative Zooming for Ultra-Small Devices." Authors are Stephen Oney, Chris Harrison, Amy Ogan, and Jason Wiese. They will present ZoomBoard at the [Computer Human Interaction](#) conference in Paris, running to May 2

As for test results of their creation, the team tried out the ZoomBoard on six students. The six were able, after eight practice trials, to enter text on average at 9.3 words per minute. Although this did not exactly demonstrate speed typing, the important plus was that the students achieved the same accuracy as with a full-sized keyboard.



Co-author Chris Harrison elaborated, "As the ultimate test, we ran a text entry experiment on a keyboard measuring just 16 x 6mm – smaller than a US penny. Users achieved roughly 10 words per minute, allowing users to enter phone numbers and searches such as 'closest pizza' and 'directions home' both quickly and quietly."

The team decided on designing ZoomBoard with a QWERTY layout, knowing it would be immediately familiar to users and could easily leverage existing skills.

More information: chrisharrison.net/index.php/Research/Zoomboard

[Press release](#)

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