FastTap: A New Fast Way to do Command Selection on Handheld Surfaces

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Touch-based UIs often do not provide any shortcut mechanisms for rapid command selection. As a result, command selection on tablets often requires slow traversal of menus. We developed a new selection technique for multi-touch tablets, called FastTap, that uses thumb-and-finger touches to show and choose from a spatially-stable grid-based overlay interface. FastTap allows novices to view and inspect the full interface, but once item locations are learned, FastTap allows people to select commands with a single quick thumb-and-finger tap. The interface helps users develop expertise, since the motor actions carried out as a novice rehearse the expert behavior.

A controlled study showed that FastTap was significantly faster (by 33% per selection overall) than marking menus, both for novices and experts, and without reduction in accuracy or subjective preference.

Our work introduces a new and efficient selection mechanism that supports rapid command execution on touch tablets, for both novices and experts.


If you’d like to try out FastTap on your Android device, please email gutwin@cs.usask.ca

In This Issue:

• FastTap: A New Fast Way to do Command Selection on Handheld Surfaces

• OneSpace: Shared Visual Scenes for Active Freeplay
The main idea that is captured by the OneSpace system is that video-conferencing for kids sucks because most video conferencing systems are built for a “talking-heads”-style interaction. For kids (say aged 5-10), the focus on “talking” sucks. In OneSpace, the idea is that you transport both people (as their whole bodies) into “another place” altogether, and allow them to play in a shared visual scene. This allows them to play with their whole bodies, enacting scenes with their partners, who are also represented by their bodies.

We are of course not the first to design video conferencing systems for kids, but I think our work really drives home the point that for kids to be engaged in a video conferencing session, they need to: (a) be “physically” (as in their bodies) involved, and (b) be really engaged with their partners. The point about bodies and toys in a visual scene has been made before, but merging the two remote sites into one is something that has not been explored in the context of “kid play” before.

In this work, we designed a study where we watched kids (and kid-parent pairs) play — for a while using OneSpace and for a while using a standard video-conferencing environment (like Skype)... 10 minutes each. Then, we examined the nature of the play that was happening. Major conclusions: in OneSpace, kids are more engaged in ‘bodily’ play, and far more engaged with the person on the remote side. We also did some post-study interviews where we asked kids about their experiences using the systems.

Blog Post: http://ricelab.cpsc.ucalgary.ca/blog/?p=8