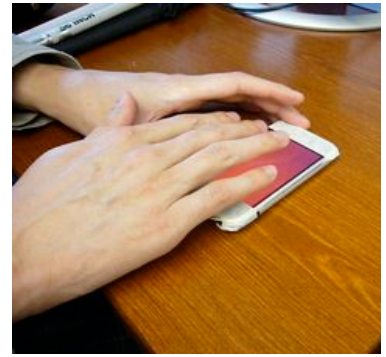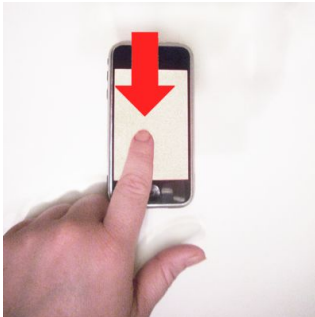# Slide Rule

Accessible Mobile Touch Screens for Eyes-Free Interaction

Slide Rule provides multi-touch interaction techniques and audio feedback that enable blind and sighted users to use mobile touch-based devices without seeing the screen.
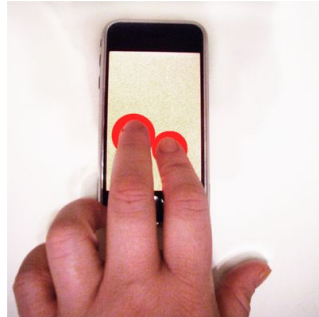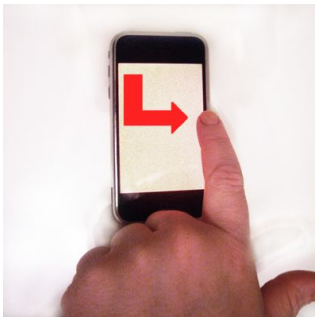
Interaction Techniques

One-finger scan
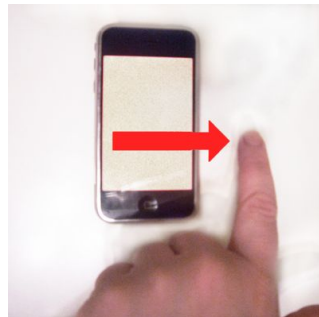As the user moves her finger along the surface, Slide Rule reads the names of objects.

Two-finger select
The user selects items by holding a finger over the target and tapping with a second finger.

L-Select gesture
The user browses hierarchical data (e.g. album info) by scanning down, then to the right.
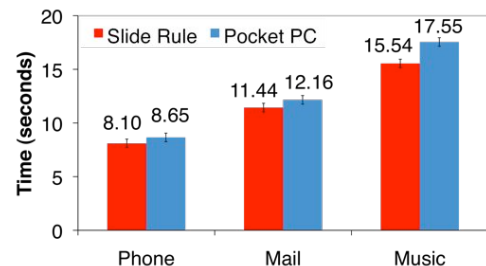
Flick gesture
A flick gesture is used to perform additional actions (e.g. controlling music playback)

User Evaluation

- Recruited 10 blind mobile phone users

- Users compared Slide Rule to a button-based Pocket PC with a screen reader

- Three prototype applications:
  - Phone Book, Mail, Music Player

Results

- Slide Rule was significantly faster than the Pocket PC ($p < .05$)

Time (seconds) — Slide Rule vs Pocket PC:

Application	Slide Rule	Pocket PC
Phone	8.10	8.65
Mail	11.44	12.16
Music	15.54	17.55

- However, users performed more errors when using Slide Rule ($p < .001$)

- 7 of 10 users preferred Slide Rule

- User feedback: "I've never seen a touch screen that accessible before, and that was pretty cool."

Future Work

- More applications and interaction methods

- Slide Rule for larger touch surfaces

Shaun K. Kane (UW iSchool)
Jeffrey P. Bigham (UW CSE)
Jacob O. Wobbrock (UW iSchool)

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