Faster Text Entry for Mobile Phones

JUDITH ODILI
TiltText: Using Tilt for Text Input to Mobile Phones

- **Daniel Wigdor**
  - Assistant Professor – University of Toronto Comp. Sci
  - Worked at Microsoft Research (including Surface)
  - Current research on gestures and multitouch on touchscreens
  - Book Co-Author: Brave NUI World: Designing Natural User Interfaces for Touch and Gestures

- **Ravin Balakrishnan**
  - Professor of Computer Science – University of Toronto Comp. Sci and HCI
  - Research interests in HCI, Information and Communications Technology for Development, and Interactive Computer Graphics
About TiltText (2003)

- Technique for entering text into 9-key mobile phone
  - Standard 9 key phone + low-cost tilt sensor
  - Uses combination of tilting phone (left, forward, right, back)
  - Pressing button + tilt to enter text
  - ‘0’ button to reset position
  - Press button without tilt for numbers
About TiltText (2003)

- Related Research
  - Multi-tap: Multi tap to select key, wait for time out or button
    - Disadvantages: Slow, time-out wait time
  - Two-Key disambiguation: Select key group, then key position (1-4)
    - Disadvantages: Never gained popularity
  - Linguistic Disambiguation: E.g T9
    - Disadvantages: Two words same sequence, need to look at screen, non-english words
About TiltText

- **Study**
  - 10 participants
  - 2 techniques (MultiTap and TiltText)
  - 2 sessions per technique
  - 640 total phrases each

- **Results**
  - Initial learning curve – TiltText started slower
  - After learning curve: 23% faster than MultiTap
  - Higher error rate than MultiTap (11% vs 3%) due to tilt errors (mostly back tilt 36% for ‘s’ and ‘z’)

- **Advantages**
  - Faster than MultiTap
  - Isn’t dependent on language
TiltText Video

HTTPS://WWW.YOUTUBE.COM/WATCH?
V=HXXF3CoY4QY
Related Research

- **Current mobile phone trends**
  - Mostly touchscreens
    - AT&T: 83%
    - T-Mobile: 79%
    - Verizon: 82%
    - Sprint: 67%
  - **Touchscreen text entry techniques**
    - Qwerty keyboard + dictionary
    - Swype
    - TikiNotes
    - MessagEase
About MessagEase

- “Fastest Time to Type a Text Message on a Touch Screen Mobile Phone” by Guiness Book of Records
  - 75.5 WPM held by Cheng Wei Chang
    - The razor-toothed piranhas of the genera Serrasalmus and Pygocentrus are the most ferocious freshwater fish in the world. In reality they seldom attack a human.

- Developed by HCI SF company: Exidees
- Available on Android, iPhone, Windows
- 9 key pad
- Select keys and drag
- Arranges text by most commonly used letters
  - Primary: A N I H O R T E S
  - Secondary: Q U P C B G D J
  - Others: V L X K M Y W F
MessagEase Video

OVERVIEW
HTTP://WWW.YOUTUBE.COM/WATCH?
V=TL8G FOETC4&FEATURE=PLCP

BREAKING THE WORLD RECORD
HTTPS://WWW.YOUTUBE.COM/WATCH?
V=HXXF3CoY4QY
Personal Experience

- Prefer physical keys
- Learning curve was a pain
- Questions????