



WPI

IMGD 5100:
Immersive HCI

Symbolic Input

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Motivation

- Several good approaches are available for
 - Selection
 - Ray casting, scaled hands, image plane
 - Manipulation
 - WIM, direct manipulation, tool-based
 - Locomotion
 - Treadmills, fly where you point/look, walking in place, game/VR controllers, Balance Board
 - System control (menuing)
 - Tablets/Pads, pinch gloves, tabletop surfaces

Motivation (cont.)

- Symbolic input remains difficult
 - Text is tough to read in some environments
 - Outdoors
 - HMDs
 - Standard keyboard is not always available
 - Can't see it (e.g., HMD)
 - Don't want to carry it (mobile)
 - Multiple languages
 - Personal vs. Public (e.g., voice)
 - Hands-free vs. Hand-held

Types of Input

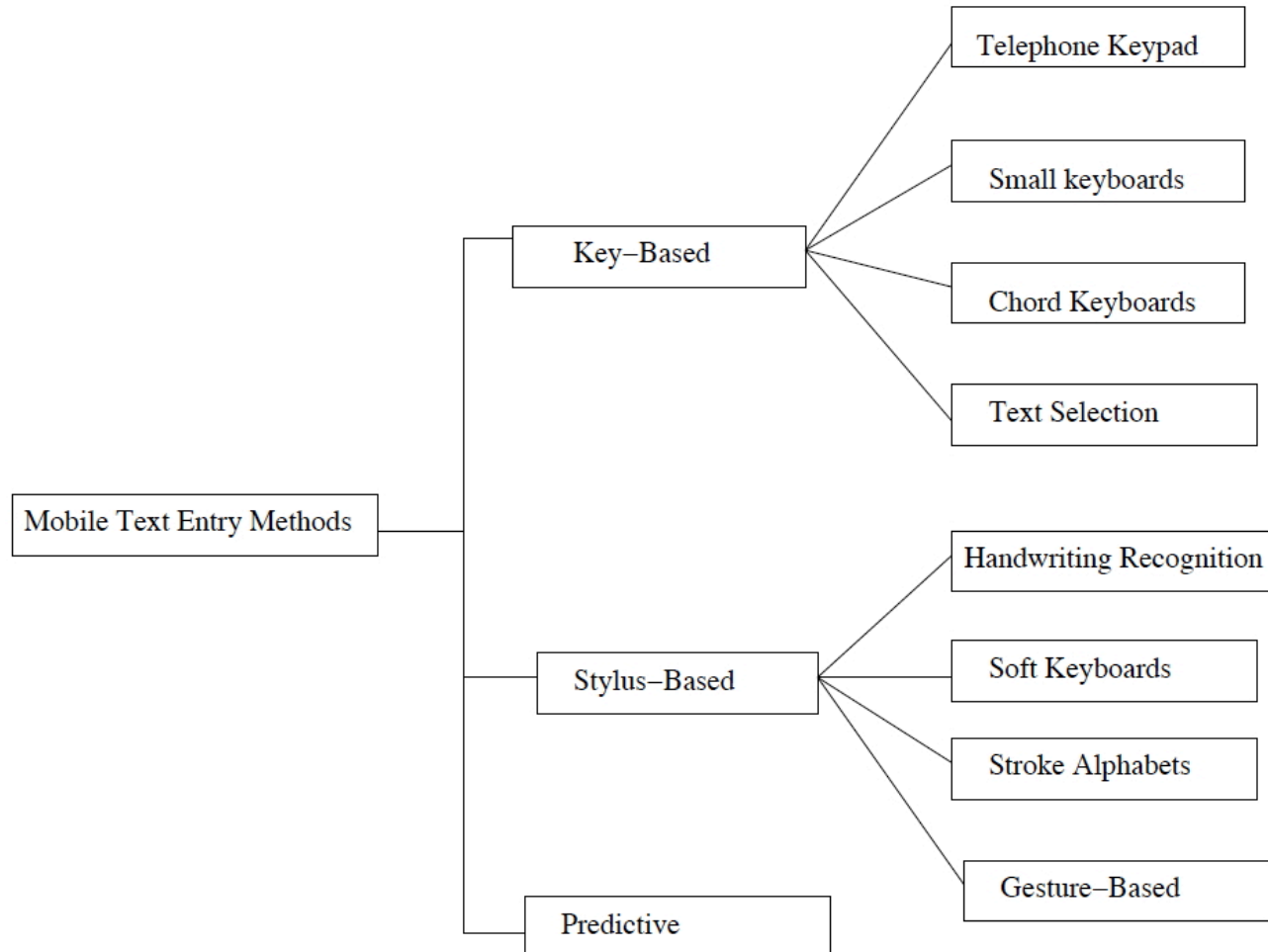
□ Text

- SMS
- Comments for chatting/tweeting
- Labels for objects
- Entering names for things (e.g., restaurants)

□ Numbers

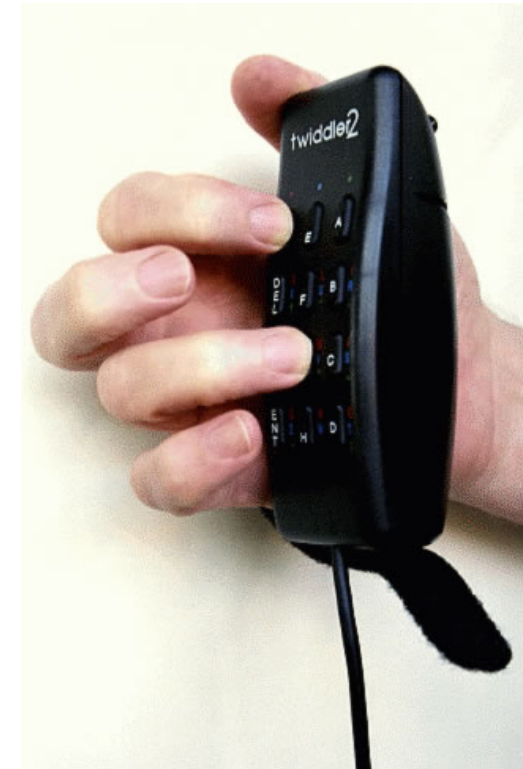
- Phone numbers
- Coordinates (e.g., immersive modeling)

Text Input Classification



Methods for Input

- Chorded keyboards
 - Twiddler2 (<http://www.handykey.com/>)



Chorded Keyboards

- FrogPad (<http://www.frogpad.com/>)
 - Wired
 - Bluetooth



Alternate Keyboards

- Belkin Nostromo SpeedPad
 - Programmable key bindings



Mobile Devices: Hard Keyboards

- Most widely used mobile text interface?



Mobile Devices: Hard Keyboards



BlackBerry



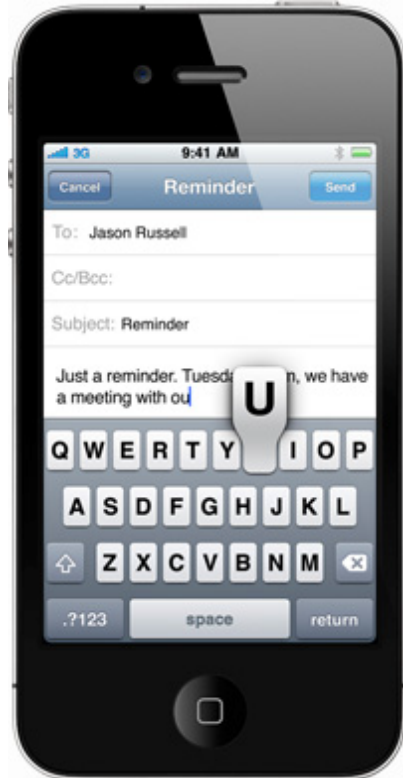
Palm Centro



Motorola Droid

<http://vimeo.com/8869525>

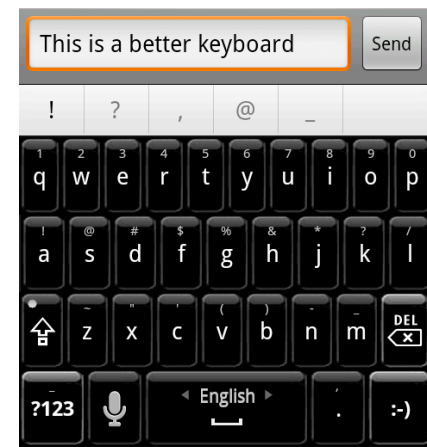
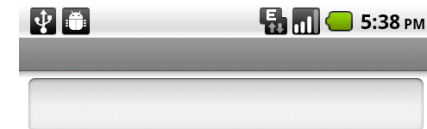
Mobile Devices: Soft Keyboards



iPhone 4
(show Web)



iPad

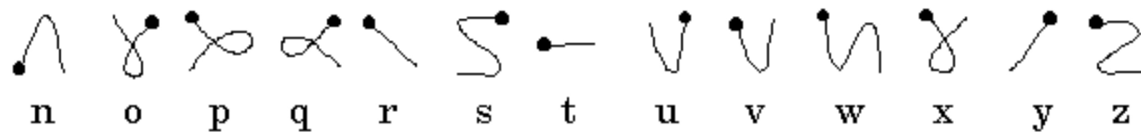
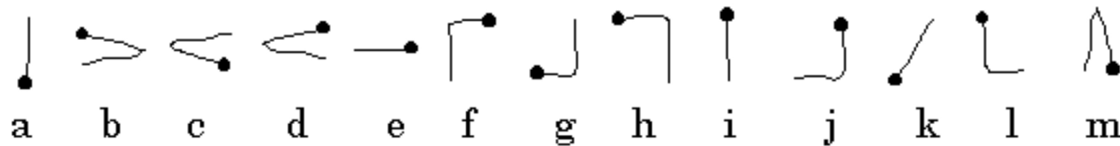


BetterKeyboard
for Android
(show clip)
(show Web)

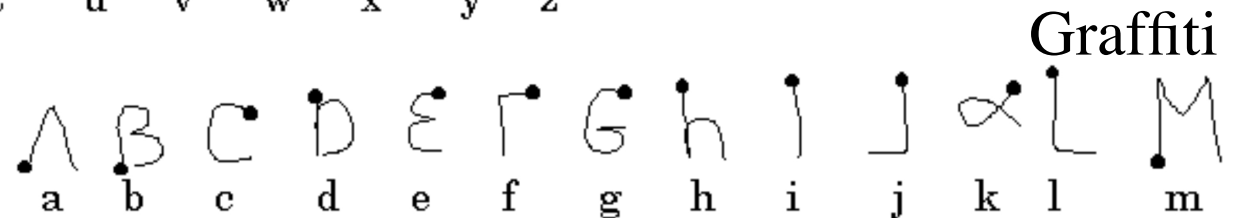
<http://vimeo.com/8869525>

Stroke Alphabets

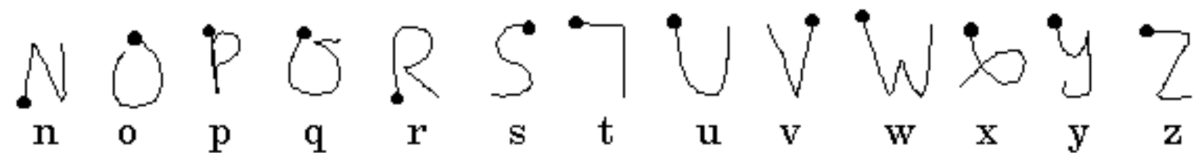
□ Used for stylus input (e.g., Palm)



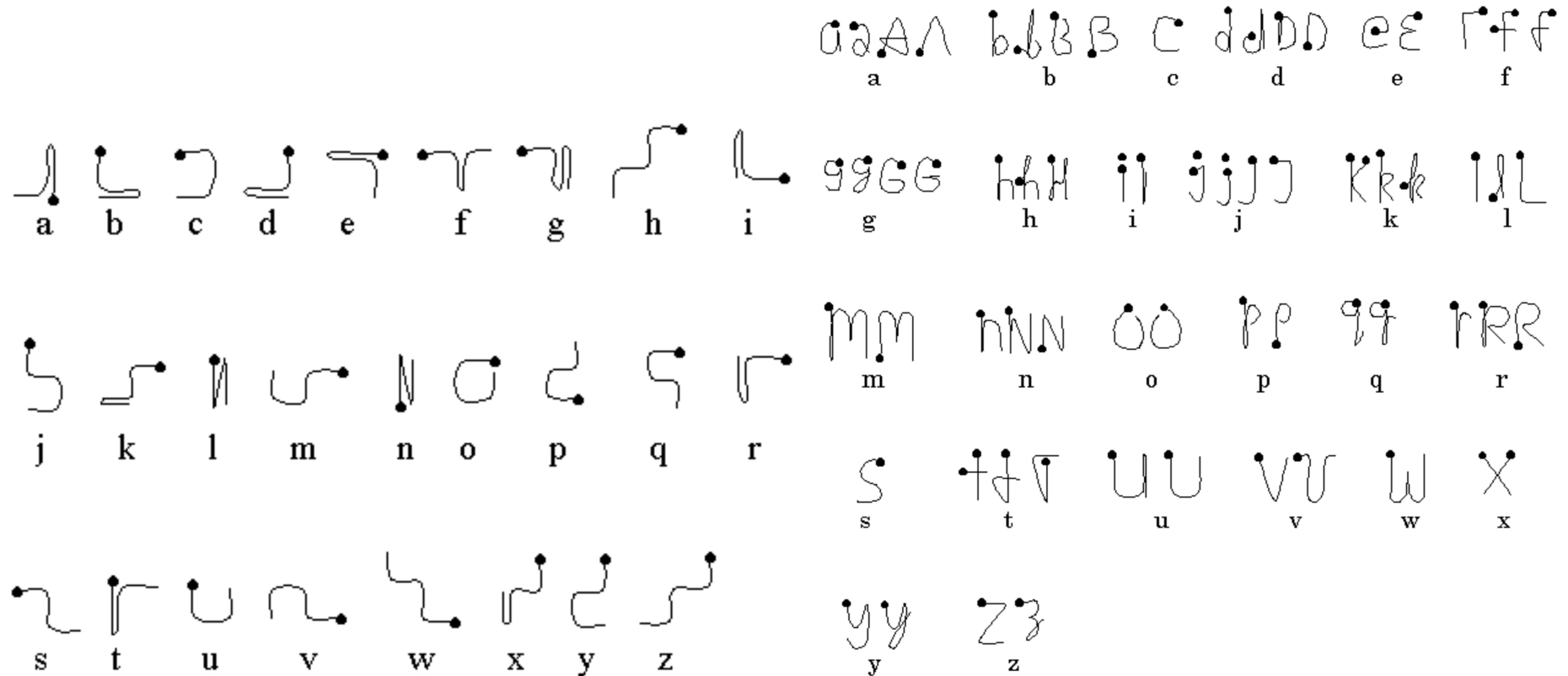
Unistroke



Graffiti



Stroke Alphabets (cont.)

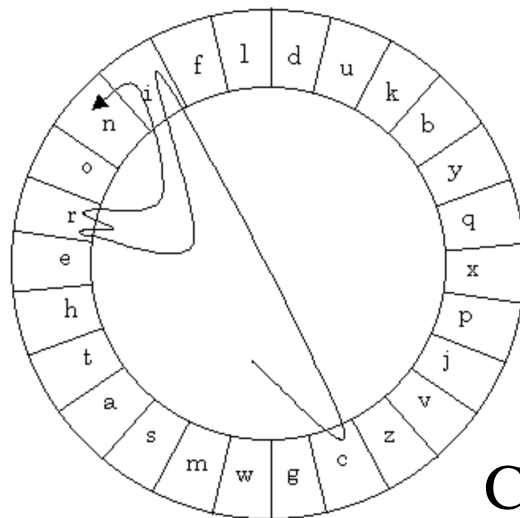


MDTIM

Jot

Stroke Alphabets (cont.)

- Stroke on top of keyboard
 - Swype (show clip)
 - SlideIt (show clip)
- Alternative strokes



Cirrin

Virtual Keyboards

- My Work
 - (show clip)

- Jian Chen & Doug Bowman
 - (show clip)

Other Methods

- Voice
 - Android voice control

- Gestures
 - ASL