

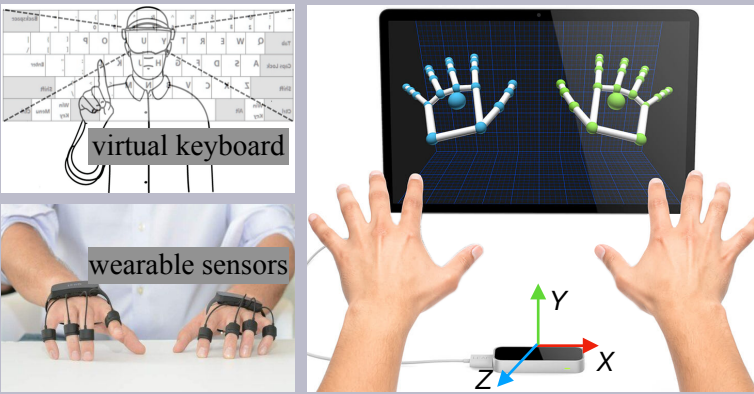
# AirTyping: A Mid-Air Typing Scheme based on Leap Motion

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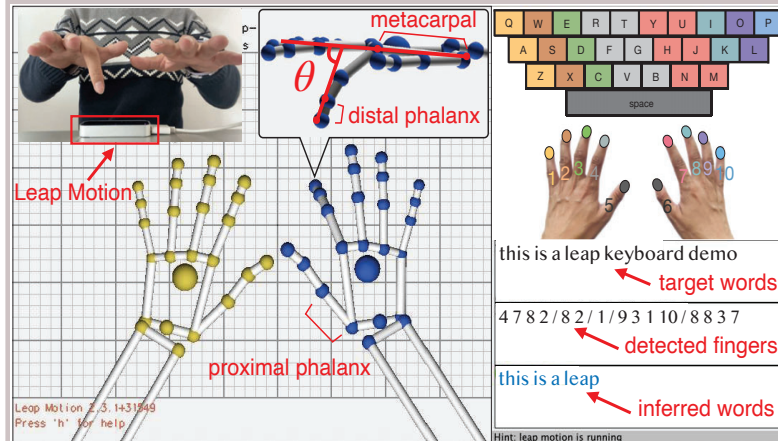
## Background

Many gesture based input schemes are proposed for mid-air interaction. However, they introduce **virtual keyboard** or **wearable sensors** for text input. We propose AirTyping to allow people to type in a **device-free** way.

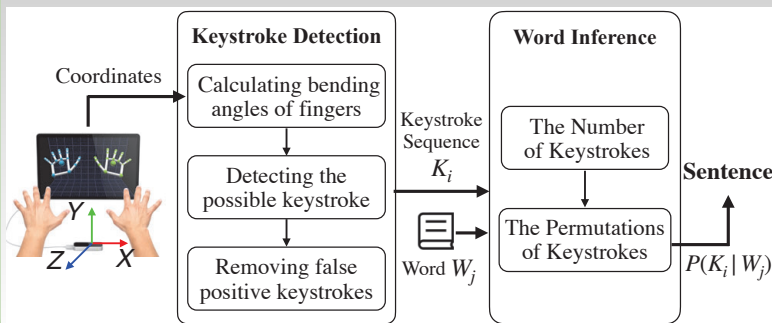


## Our System

We propose AirTyping, a mid-air typing scheme based on Leap Motion, which can be used in many scenarios inconvenient to use keyboards or required to protect the privacy of text input without a visible keyboard layout.



## Workflow



Two challenges to be addressed:

- keystroke detection: the fingers not making a keystroke can also move with the finger for a keystroke.
- keystroke recognition: possible wrong, false positive and false negative detected keystrokes, and one-to-many mapping between the finger and characters

## Evaluation

The true positive rate of keystroke detection is 92.2%, and the accuracy that the top-1 inferred word is the typed word achieves 90.2%.

