

### MAGIC THUMB: FINGER WORN GESTURE CONTROLLED BLUETOOTH KEYBOARD AND MOUSE

#### IITM Technology Available for Licensing

#### Problem Statement

- Wearable devices are now being extensively researched and used for various applications. These devices not only perform many basic computing functions, akin to laptops and smartphones, but may also perform unique health-tracking services.
- Further, with respect to use as a keyboard, the **wearable devices conventionally rely on a tap-kind input** or present a virtual keyboard allowing a user to provide input thereby allowing a user the ease to wirelessly access a user device such as a laptop, computer, tablet etc.
- Therefore, exists a need for a finger worn device that is compact, is **capable of operating both a mouse and a keyboard** and recognizes air gestures drawn by the user with a greater accuracy for an improved user experience.

#### Technology Category/ Market

- Wearable Devices
- Sensors

**Applications** - Consumer Electronics, Automotive, Healthcare

**Market** - The gesture recognition and touchless sensing market is projected to reach **USD 37.6 billion by 2026** with a **CAGR of 22.6%** from 2021- 2026.

#### Technology

- The technology is a finger worn device (*Fig. 1*) that is **controlled by hand gestures** with capability of being operated as a mouse and a keyboard for various electronic devices.
- The device comprises of a **sensor housing** configured to be placed at distal phalanx of a finger of a user and is **connected to electronic device via bluetooth**.
- The sensor housing has **motion sensor i.e sensor that can capture orientation and linear acceleration**, and led above the finger nails and 3 buttons over the battery enclosure (*Fig. 2*). Further, it includes visual indicators configured to provide pairing indication of the finger-worn device as the mouse or the keyboard with the user device. Hence, this **wearable gestural device is called magic thumb**.

- Furthermore, the finger-worn device is **configured to detect patterns drawn by the user in air using the motion sensor** and transform the detected patterns into valid keyboard inputs by employing linear acceleration based peak sequencing technique.

#### Intellectual Property

- IITM IDF Ref. **2208**
- IN 438579 - Patent Granted**

#### Images

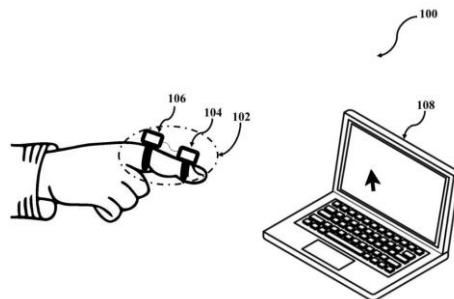


Fig. 1 Implementing a finger worn device

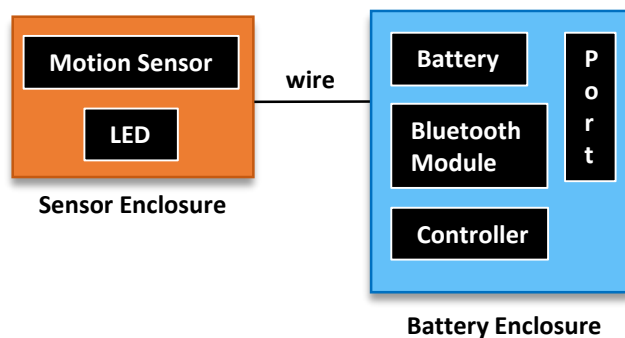


Fig. 2 Block diagram of the magic thumb device

#### TRL (Technology Readiness Level)

TRL - 3, Proof of Concept Stage

#### Research Lab

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