

[Request Information](#)

[Permalink](#)

# ThumbOT, a Portable Robotic Device for Quantitatively Assessing and Intensively Training Thumb Proprioception

Tech ID: 34232 / UC Case 2025-854-0

## BRIEF DESCRIPTION

A standalone, low-cost robotic device that quantitatively assesses and intensively trains thumb proprioception to enhance motor recovery after neurological injury.

## FULL DESCRIPTION

This innovative device provides precise, quantitative evaluation and engaging, game-based training of thumb proprioception, a critical yet often neglected aspect of hand motor recovery following stroke, cerebral palsy, spinal cord injury, and other neurological disorders. Designed for portability and ease of use without requiring external computers, it offers therapists and patients a practical tool to measure, monitor, and improve thumb sensory and motor functions through interactive exercises that support finger dexterity and pinch grip strength.

## SUGGESTED USES

- » Stroke rehabilitation centers and outpatient clinics
- » Physical and occupational therapy practices
- » Home-based neurorehabilitation programs
- » Devices for cerebral palsy and spinal cord injury rehabilitation
- » Healthcare providers focusing on hand function recovery
- » Rehabilitation technology companies seeking innovative therapy tools

## ADVANTAGES

- » Quantitative, reliable, and thumb-specific proprioceptive assessment
- » Portable and standalone design with built-in controls and display
- » Engaging game-based interface providing real-time feedback
- » Supports both clinical and home use for continuous therapy
- » Tracks performance and progress to guide personalized rehabilitation
- » Addresses a critical gap in current proprioceptive evaluation and training tools

## PATENT STATUS

## CONTACT

Richard Y. Tun  
tunr@uci.edu  
tel: 949-824-3586.



## OTHER INFORMATION

### KEYWORDS

stroke rehabilitation

### CATEGORIZED AS

- » **Medical**
  - » Devices
  - » Disease: Central Nervous System
  - » Disease: Musculoskeletal Disorders
  - » Rehabilitation

### RELATED CASES

2025-854-0

**UCI** Beall  
Applied Innovation

5270 California Avenue / Irvine, CA  
92697-7700 / Tel: 949.824.2683



© 2025, The Regents of the University of  
California  
[Terms of use](#)  
[Privacy Notice](#)