Haptic Illusion Glove: A Glove for Illusionary Touch Feedback when Grasping Virtual Objects

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Natural Gestures

Glove with copper band to detect when
the grasp is closed, and fingers touch the palm –
electric circuit.

The apparatus consists of a simple glove with an arduino on top. Natural grabbing is implemented in a Unity3D application by using HTC Vive HMD and a Vive Tracker.
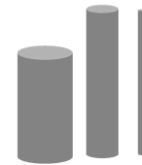
The idea

Using simple methods for natural grabbing

Kinesthetic
Touch
Haptic
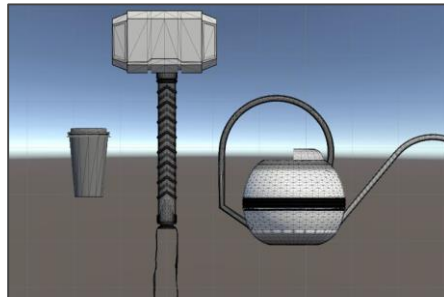

Grabbing three 3D objects with different radius sizes

PROPRIOCEPTION

Results

Comparing the objects in a **SUS** study:

- Watering can *(small Radius)* reached **80**
- Coffee cup *(large Radius)* reached **79**
- Hammer *(between those extremes)* reached **82**
→ No significant difference (Kruskal-Wallis Test)
→ All Scores greater than 68, the scale for indicating a usable state
→ Most participants wrote "ease to use"or reported it was "intuitive"
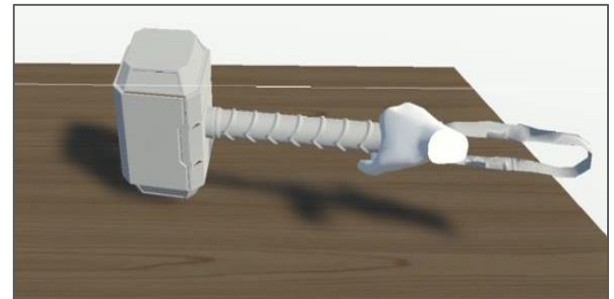
Conclusion

- No signifant difference was found between 3 virtual cylindrical objects
- Low-fi prototype can be improved with our recommendations
- The Haptic Illusion Glove could be **shown to be a promising VR input device**

The Glove has a future!