Gestures for mid-air interaction

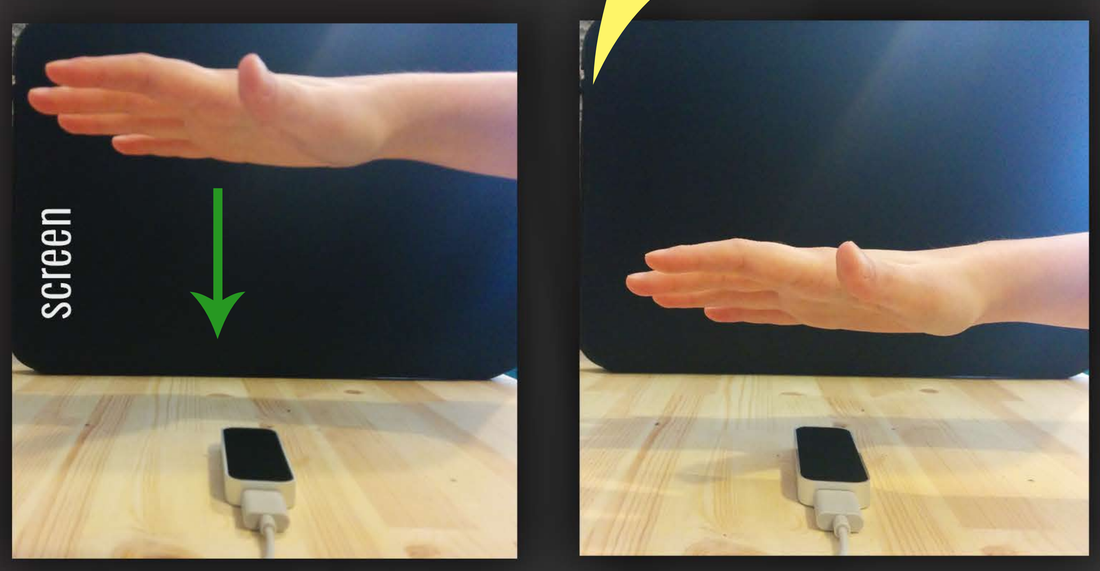
Vanessa Vuibert - Centre for Intelligent Machines - vvuibert@cim.mcgill.ca
Jeremy Cooperstock - Centre for Intelligent Machines - jer@cim.mcgill.ca

Can an indirect mid-air gesture interface solve a docking task as fast as a tangible six-degree of freedom device?

Compares Leap Motion to Phantom Omni
The docking task involves rotating and translating a chair
Uses stereoscopic rendering

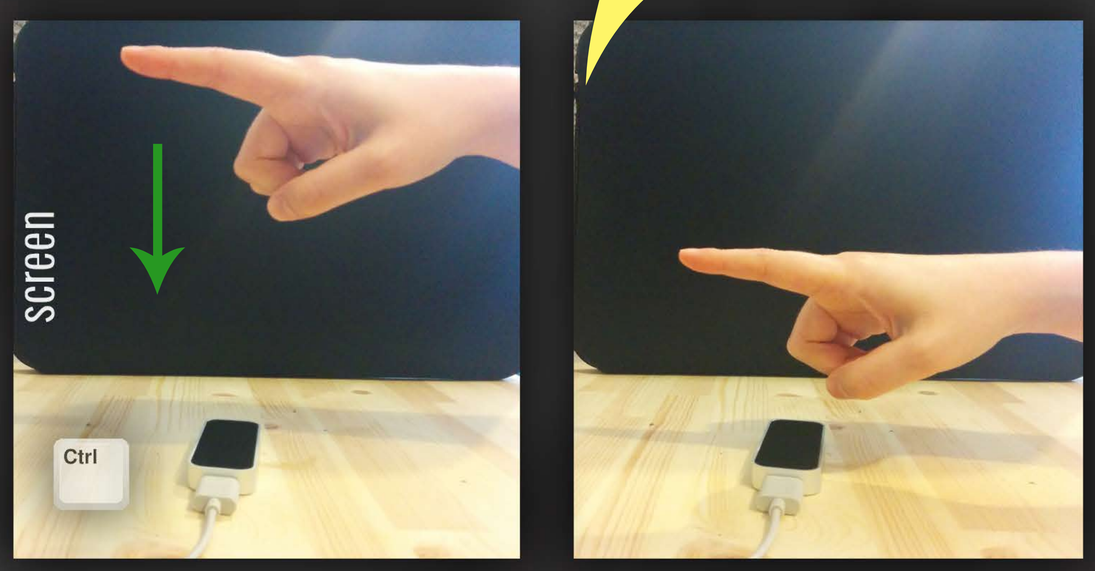
Experiment Setup

Translation gesture



The hand has full control over the three axes (X Y Z) when translating

Rotation gesture



The finger's translation rotates the chair in an axis perpendicular to the direction of the movement of the finger

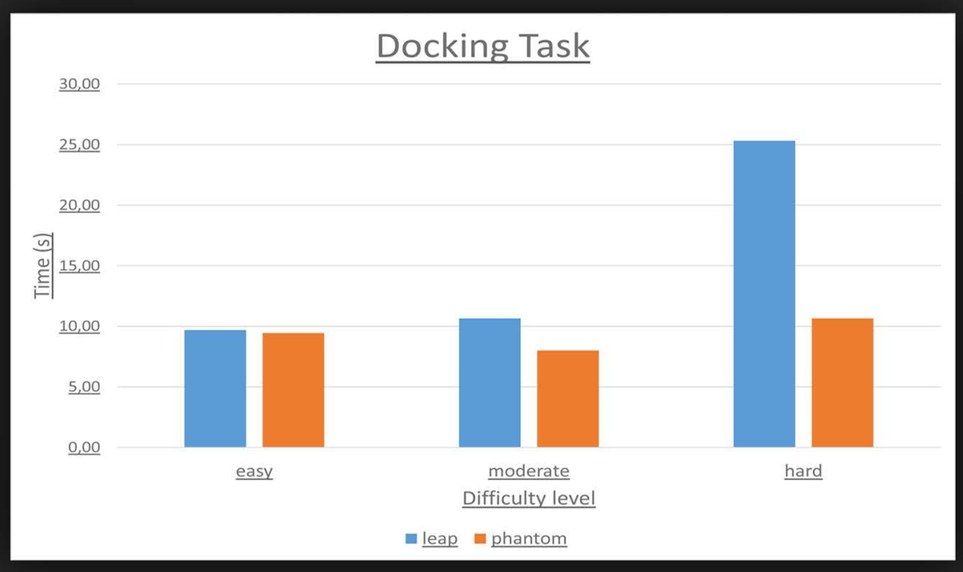
Results

Three subjects performed 20 docking tasks for each difficulty level.
The docking time was similar for the easy and hard levels.

The difficulty level was set by:

- The distance between the cursor and the target.
- The angle between their quaternions.

Difficulty Level	Angle (degrees)	Distance (units)
Easy	20	3
Moderate	15	2
Hard	5	1



SHARED REALITY LAB
Graphisme, animation et nouveaux médias
Graphics, Animation and New Media
McGill