Experimental Design

Training

With the introduction of the every device there will be a short video played describing how to use the device on the cursor manipulation task (30 seconds-2 minutes). Before gestural tasks a calibration will be issued to map a user's space to the screen. A user will then be asked to complete a training consisting of the cursor manipulation task but limited to 5 targets. This should take no longer than 30 seconds.

Gestural Calibration

The calibration will be a four point calibration representing the user's screen boundaries during gestural input. The user will be asked to calibrate each corner for 5 seconds holding their hand in the position of the respective corner. This should take 3-10 minutes

The Experiment

The user will be asked to participate in a novel cursor manipulation task using the mouse, touchpad, and our gestural interface over each hand totalling 6 rounds of the cursor manipulation task.

Cursor manipulation task (2-4 minutes each)

The cursor manipulation task will consist of 70 trials in which the user will be asked to navigate to a toggled target on the screen and hover over it for .5 seconds. Once the user has hovered for .5 seconds the target will disappear and the next target will be displayed. Once the participant has completed all tasks they will be issued an exit survey asking for feedback about the experiment. The total time of the experiment should not exceed 60 minutes.

Data Collected

We will collect various metrics including error rate, total movement time, movement time per trial, distance traveled per trial to be analyzed.

Task	min	max
Training video mouse	0.5	0.5
Mouse training exercise with preferred hand	0.5	0.5
Mouse preferred hand	2	3

experiment		
Mouse training exercise with non-preferred hand	0.5	0.5
Mouse non-preferred hand experiment	2	3
Training video touchpad	0.5	0.5
Touchpad training exercise preferred hand	0.5	0.5
Touchpad preferred hand experiment	2	4
Touchpad training exercise non-preferred hand	0.5	0.5
Touchpad non-preferred hand experiment	2	4
Personal Space training video	2	3
Personal Space preferred-hand calibration	3	9
Personal space preferred hand training exercise	0.5	0.5
Personal space preferred hand experiment 1	2	4
break	1	1
Personal space preferred hand experiment 2	2	4
Personal Space non-preferred-hand calibration	3	9
Personal space non-preferred hand training exercise	0.5	0.5
Personal space non-preferred hand	2	4

experiment 1		
break	1	1
Personal space non-preferred hand experiment 2	2	4
Exit Survey	1	3
Total Duration	31	60