

# Control Menu based Perception of Space

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**Abstract** Today, people's life cannot leave the electric equipments, such as mobile phone, iPad and other equipments that need people to control. There have been so much inputs, such as mouses, styluses and figures. Traditional ways of interaction mainly provide x-y position to allow users to control the menu, but they provide z position rarely. Most of inputs are based on touch screens on the equipment or buttons on the control table. The perception of space has been always ignored. We will discuss a new different input way using the sense of space perception. In this paper, we explore human's ability to touch a particular region of space exactly using this sense. The experiment we designed invests people's ability to select the specific space division in front of them, with full or partial visual feedback. And the experiment also considers the two selection methods to confirm users's selection once the specific space acquired, we also give some questionnaires to participations to collect user feedback informations //

**Keywords** Perception of space · Control menus · Human computer interaction

## 1 Introduction

Traditional HCI has been designed to two degree-of-freedom mapping the x-y position that mouse, styluse or figure always provide. In addition to

these inputs, there also have rockers and wheels provide x-y position sameily. So much papers discuss these inputs and provide much improvement programs based on these inputs. These inputs have been widespread used. But in some situations, no matter how to improve these inputs, they have limitations, for example, when you use AR device, it's inconvenient to use traditional inputs, especially to use immersing AR device. As immersing AR devices become more prevalent, we should discover new input ways to improve people's input feelings

In this paper, we design an experiment to investigate users' perception of space. Questions that need to be answered include: how much discrete layers the space in front of user can be divided in vertical and horizontal directions, what mechanisms can be used to confirm the users' selection, and what is the impact of visual feedback, how much difference between right-handed and left-handed when they are supposed to touch a particular region of space.

## 2 Section title

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### 2.1 Subsection title

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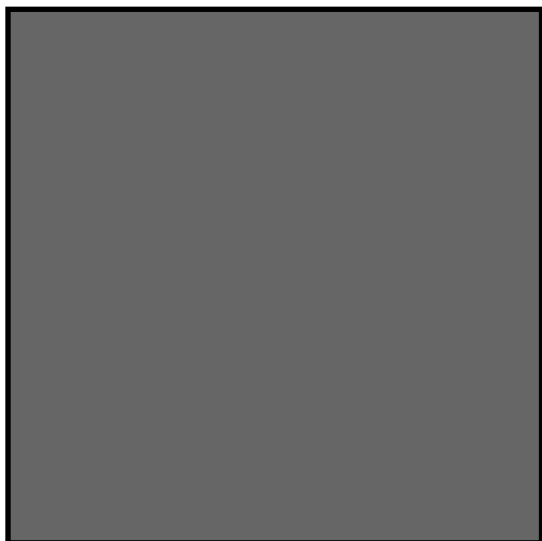
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$$a^2 + b^2 = c^2 \tag{1}$$

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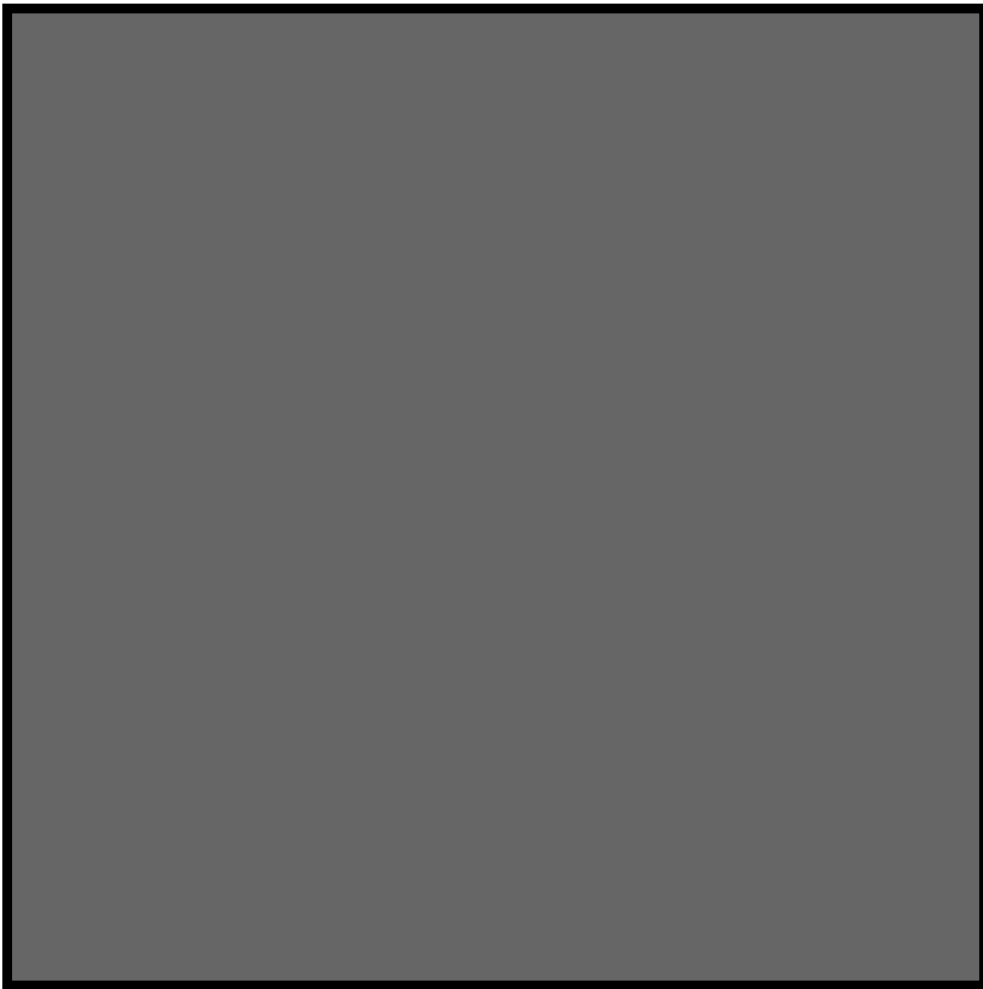
**Fig. 1** Please write your figure caption here

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## References

1. Author, Article title, Journal, Volume, page numbers (year)
2. Author, Book title, page numbers. Publisher, place (year)



**Fig. 2** Please write your figure caption here