

Paper Airplane VR

Keqiang Li
keqiang.li001@umb.edu
University of Massachusetts Boston

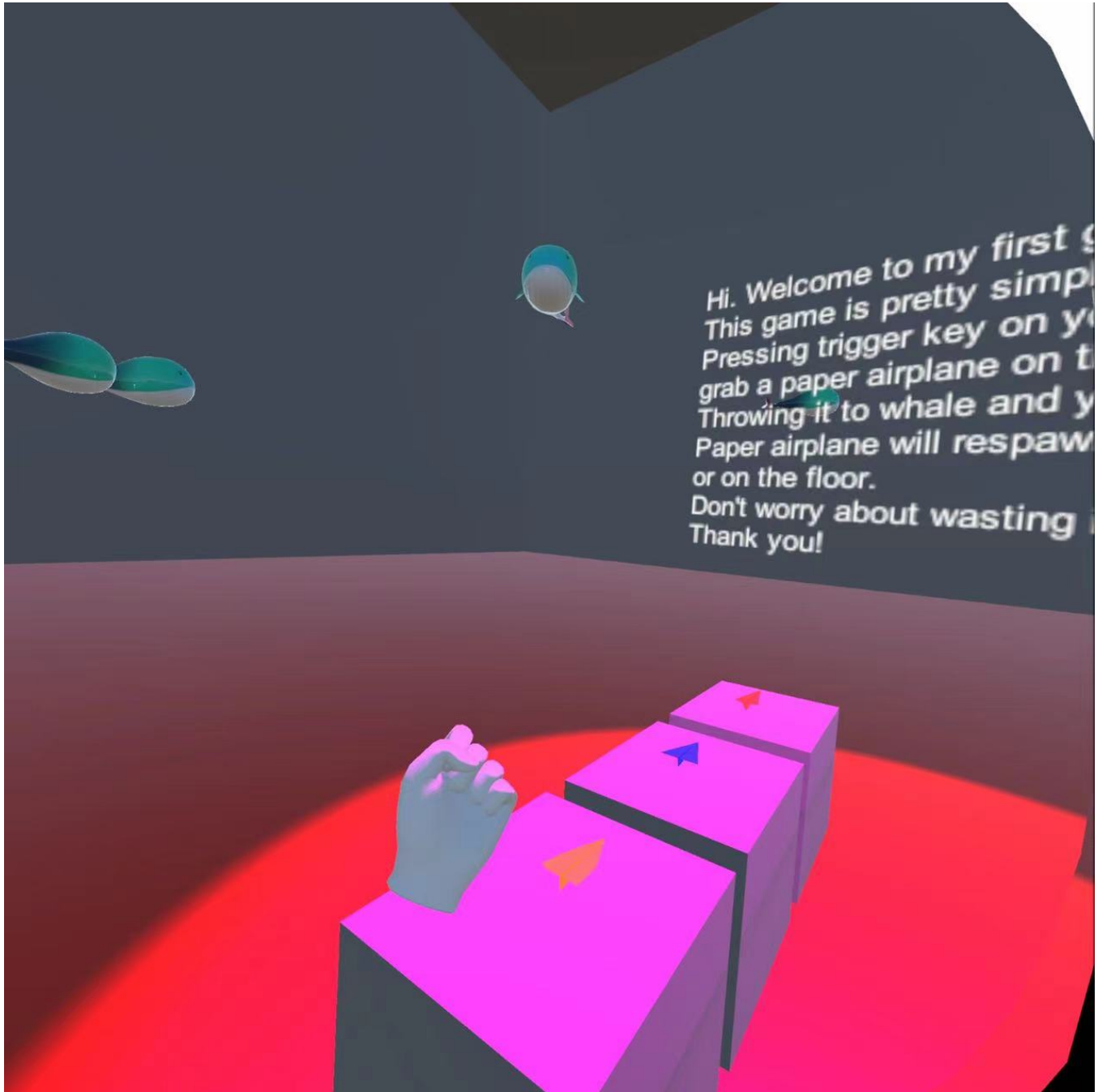


Figure 1: Paper Airplane VR

ABSTRACT

I made a simple paper airplane VR game created with unity engine. In this game, player can drag a paper airplane and thrown it to hit the randomly moving target and get scores.

KEYWORDS

VR

ACM Reference Format:

Keqiang Li. 2021. Paper Airplane VR. In *CS460: Computer Graphics at UMass Boston, Fall 2021*. Boston, MA, USA, 3 pages. <https://CS460.org>

1 INTRODUCTION

I want to make do something fun and what I have never done before in this class. Therefore I choose to make a VR game. Besides, I believe VR will be widely popular and used in the next decade. So to me, this project is also a great chance to get some preliminary knowledge of VR as a developer.

2 RELATED WORK

JavaScript [1].

3 METHOD

This game consisted of three main parts. The first is making animated hand. I used hand model to replace controller model. Besides that, I added animations to hand model so that when player press trigger button on the controller, hand model will do corresponding animation. The second is stimulating paper airplane movement. I added some components and scripts to paper airplane object so that when player throw it, it will looks gliding. The third is scripting randomly movement script for target objects. The script will make the target object moving randomly on the map and once it got hit by airplane, the scoreboard will update. Other than these three main parts, there are some small but fun aspects. I scripted some objects to make it being able to re-spawn. And there is particle animation for hitting affect and background music and scoreboard system.

3.1 Implementation

```
//to detect if airplane hits the target
void OnCollisionExit(Collision cl)
{
    if (cl.gameObject.tag == "Target")
    {
        ps.Play(true);
        airplane.position = originalP;
        score.currentScore += 1;
    }
}
```

Permission to make digital or hard copies of part or all of this work for personal or classroom use, for non-commercial advantage and that copies bear this notice and the full citation on the first page. Contact the owner/author(s).

CS460, Fall 2021, Boston, MA

© 2021 Copyright held by the owner/author(s).

ACM ISBN 1337.

<https://CS460.org>

3.2 Milestones

3.2.1 *Milestone 1.* Brainstorming on paper what a VR game needs and what game engine need to do it.

3.2.2 *Milestone 2.* Trying to learn how to make a animated hand in unity engine.

3.2.3 *Milestone 3.* Trying to learn what script and how it works to a game object.

3.2.4 *Milestone 4.* Trying to write own scripts for game objects.

3.3 Challenges

Describe the challenges you faced.

- Challenge 1: Making animated hand is difficult.
- Challenge 2: Writing script for random movement is also tough to me because before this project, I have zero understanding related to script.
- Challenge 3: Stimulating paper airplane movement. I had tried to make to move like paper airplane in real life. But then I realise that is not possible because that is a complicated math problem. So I end up to turn to make it feel like gliding.

4 RESULTS

I successfully solve all those challenges above. However, I know this is just a simple VR game. The goal of this final project is to create contents for Oculus guest 2. I just made a simple VR game for myself entertainment. So basically i know i did not achieve the goal. However, I gained a lot fun while learning new stuff about VR and unity engine.

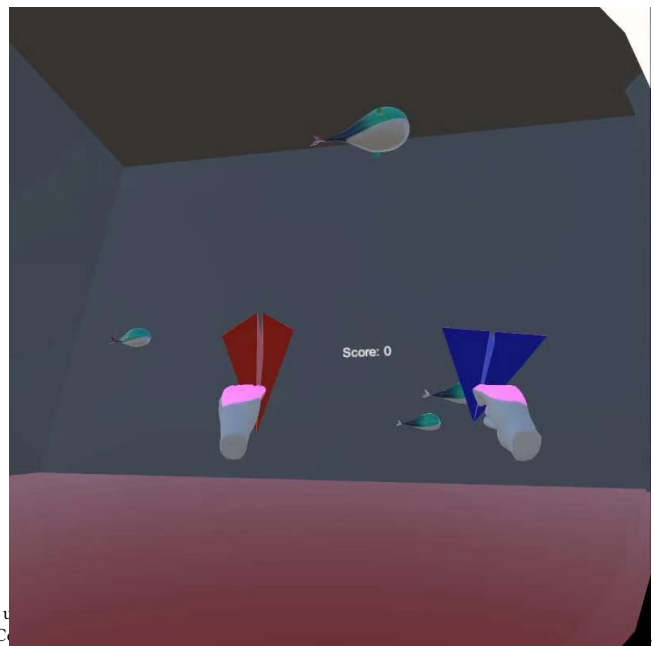


Figure 2: Throwing Paper Airplanes

Table 1: Some example table

Device	Performance
Oculus Guest 2	60 FPS

5 CONCLUSIONS

I successfully made my first VR game. Before doing it, I did not expect myself to do too much because I had known nothing about

game engine and how to make a game. However, by doing this final project, I learned a lot of new stuffs. I got the chance to get familiar to unity engine and have some basic understanding of how to make a game/game object. Even though I just made a rough and simple game, this game is my first game.

REFERENCES

- [1] Valem. 2020. Introduction to VR in Unity - PART 2 : INPUT and HAND PRESENCE. URL: <https://www.youtube.com/watch?v=VdT0zMcggTQ> (2020).