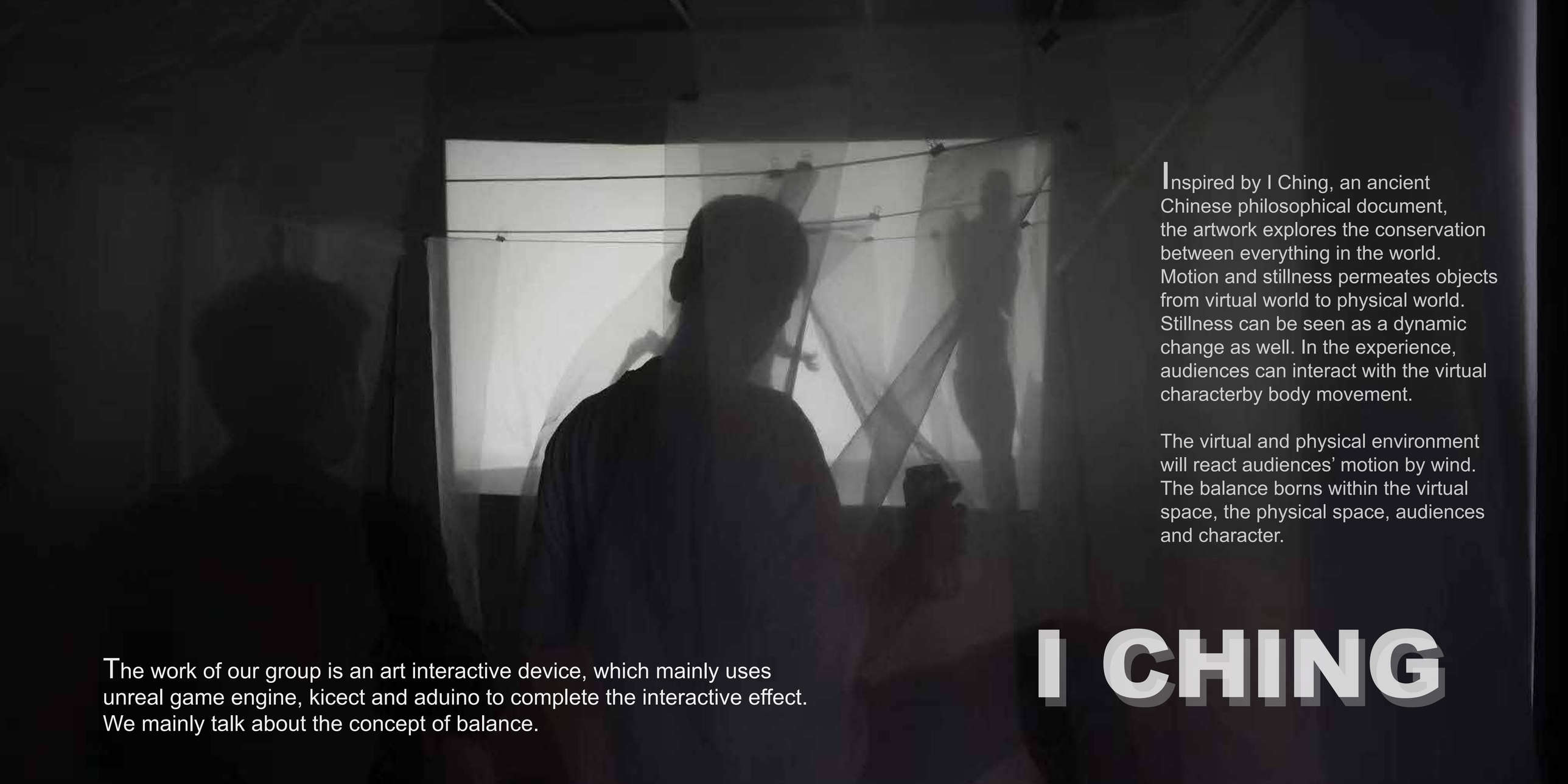


Inspired by I Ching, an ancient Chinese philosophical document, the artwork explores the conservation between everything in the world. Motion and stillness permeates objects from virtual world to physical world. Stillness can be seen as a dynamic change as well. In the experience, audiences can interact with the virtual characterby body movement.

The virtual and physical environment will react audiences' motion by wind. The balance borns within the virtual space, the physical space, audiences and character.

I CHING

The work of our group is an art interactive device, which mainly uses unreal game engine, kicect and aduino to complete the interactive effect. We mainly talk about the concept of balance.

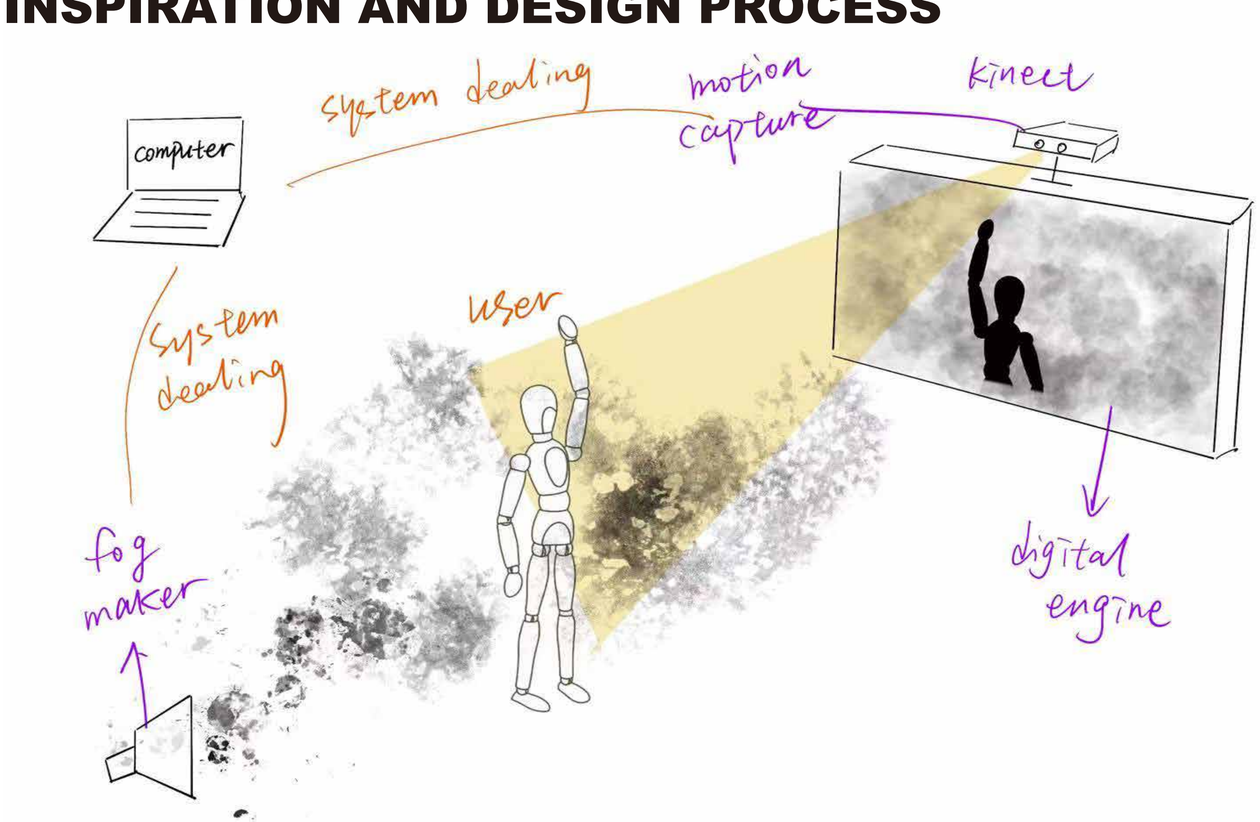
WORK CONTENT

I was mainly responsible for Creative Design, Aduino circuit production and code, The Blueprint of connecting ureal to aduino, and participating in the development of visual style of unreal model.

All codes and related files are here.

URL:
https://github.com/RayWangRui/Advanced-Visualisation-and-Computational-Environments-Fianl-Project

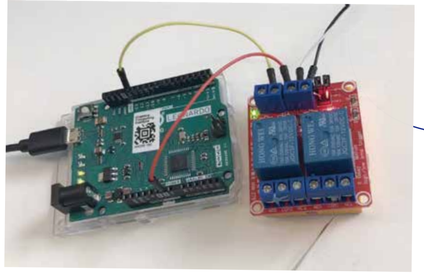
INSPIRATION AND DESIGN PROCESS

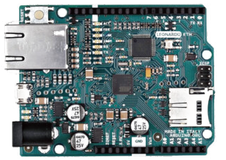


After the group discussion, our concept was "fog" at the beginning, so we wanted to use the smoke simulator at the beginning to make the fog circulate from the screen and the real world.

However, due to the limitations of venues. We changed fog into wind, but wind cannot be visualized directly, so the visual form of wind I designed is "silk". We select Organza as our main cloth, and use a blower to blow it to form the visual effect of wind.

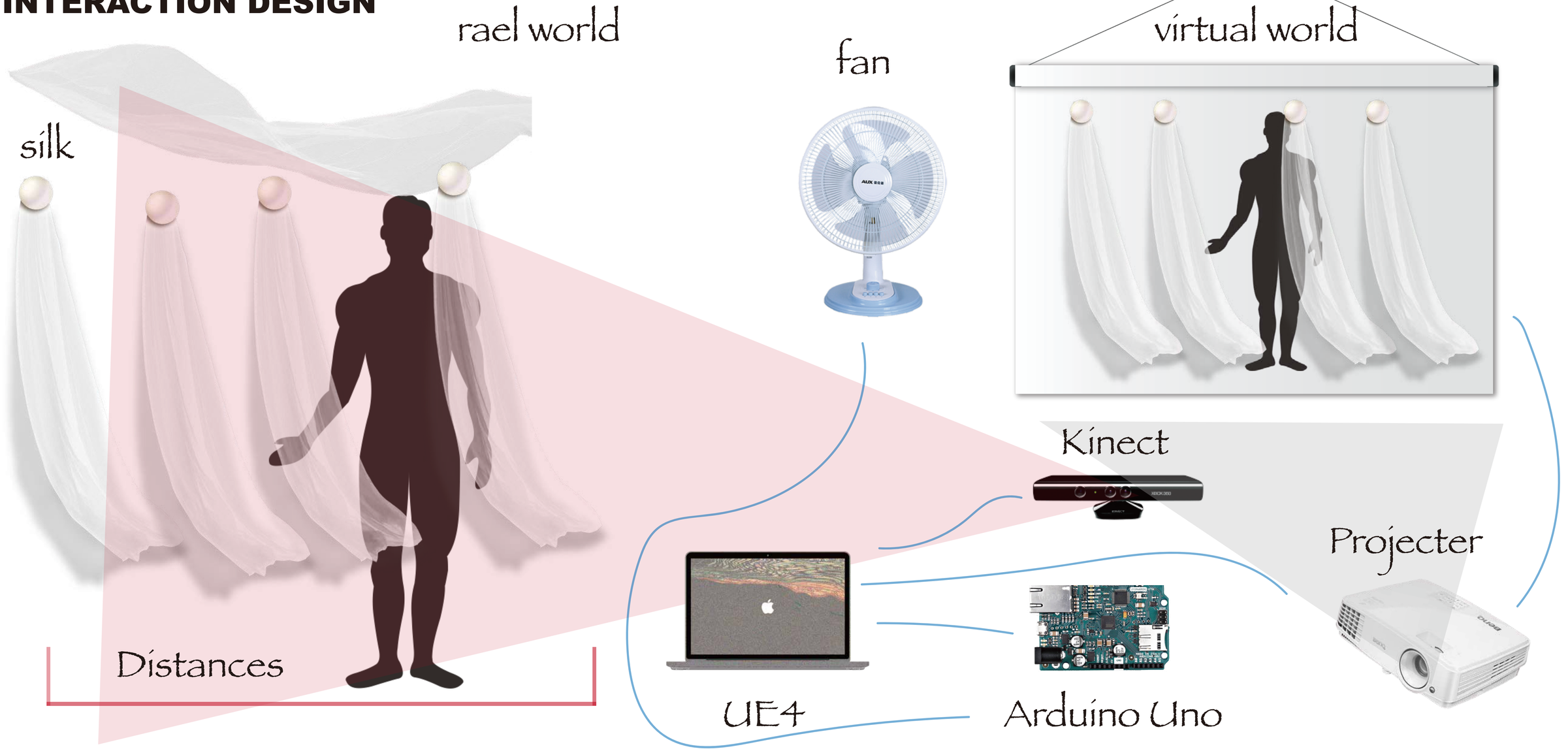
Visualization of wind





The starting point is to make a very "cool" device, so I hope that the work is not limited to the ureal game engine. We also need to add some physical somatosensory devices, so that the audience can experience the work immersively. Therefore, I put forward the concept of building a virtual scene and a real scene, that is, the visual content in the unreal engine is consistent with the real physical scene. Thus, the scene is constructed to restore the augmented reality experience.

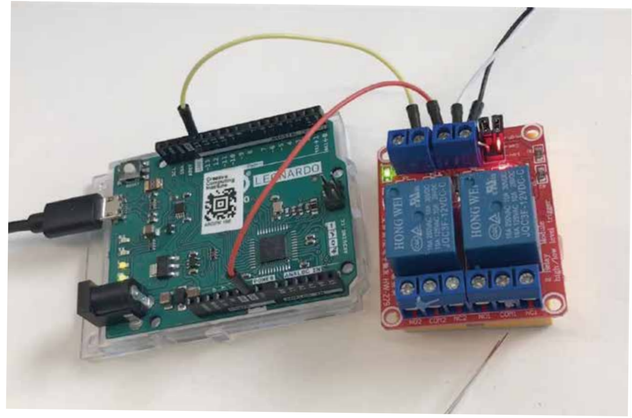
INTERACTION DESIGN



Visual Design

Based on the feeling of the whole interaction, we hope that this immersive feeling is simple and clear, so we hope that the whole tone of the color is clean and clear.
We use the color of "Tai Chi eight trigrams array". Because "Tai Chi" also has the concept of balance in Chinese culture, we choose the color: black and white. Let other team members complete the establishment of unreal scene model.

ARDUINO PART AND CODE & BLUE PRINT



fanControl

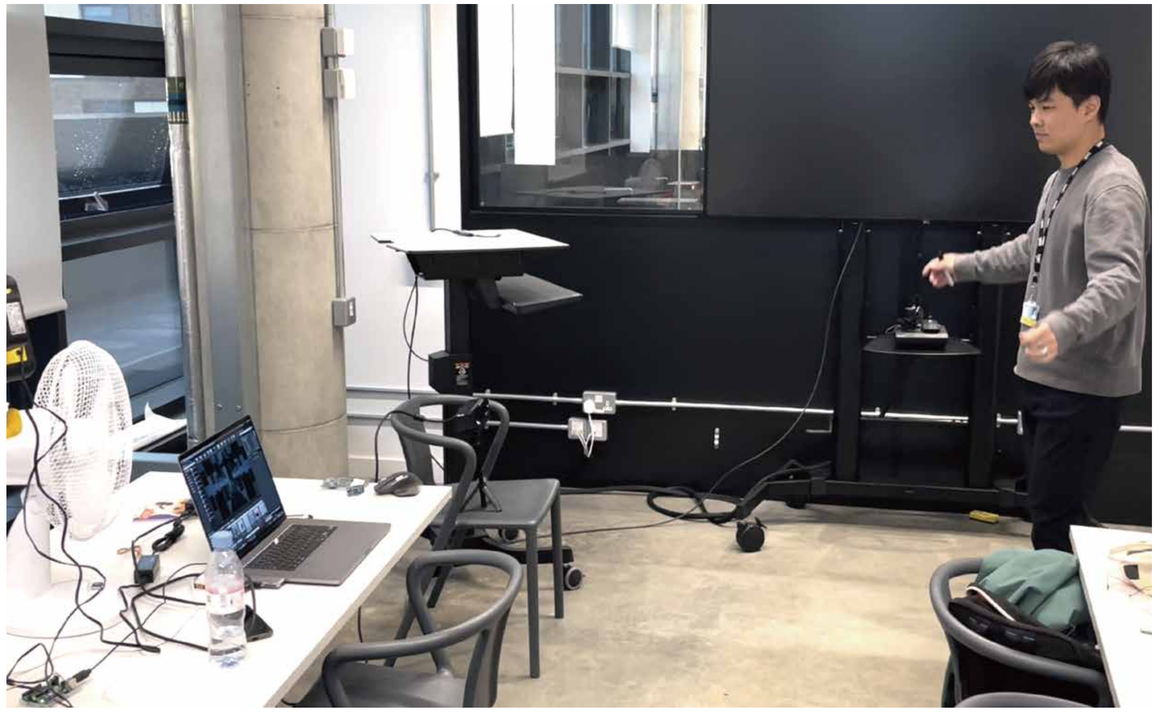
```
#define  LED_BUILTIN  13             //宏定义LED引脚，便于识记
#define  OFF_LED  LOW              //宏定义高电平时为关闭LED灯
#define  ON_LED   HIGH               //宏定义低电平时为打开LED灯
//char uart_rx_buf = 0;              //声明一个char类型变量，用于存储串口接收到的字符
char input = 0;//定义serail的输入
char fan;              //定义风扇转速
void setup(){                       //初始化
    //put your setup code here, to run once:
    pinMode(LED_BUILTIN,OUTPUT);     //初始化LED引脚为输出模式
    Serial.begin(9600);        //初始化串口波特率为115200
    digitalWrite(LED_BUILTIN,OFF_LED);//初始状态LED熄灭
}

void loop(){                        //主循环,实现串口控制LED的亮灭

    //put your main code here, to run repeatedly:
    while(Serial.available()) {  //如果串口有数据

//       digitalWrite(LED_BUILTIN, HIGH);
//       delay(10);

       fan = Serial.read();//Serial.read()读缓冲区字符，每次只能读一个字节
       Serial.println(fan);

        if(fan == '1') {

           digitalWrite(LED_BUILTIN, HIGH);   // turn the LED on (HIGH is the voltage level)
           delay(500);                       // wait for a second

        }
        else if(fan == '0') {
//        else {
           digitalWrite(LED_BUILTIN, LOW);    // turn the LED off by making the voltage LOW
           delay(500);

        }
      fan = 0;            //清除接收到的字符
    }
}
```

ALL THE CODE HERE!!!

TOO MUCH TO SHOW

https://github.com/RayWangRui/Advanced-Visualisation-and-Computational-Environments-Fianl-Project

PREPARE



TESTING

FINAL BIGSHOW