

Reflection Exercise

Creative Making: Advanced Physical Computing

Week_2

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Creative Computing MSc

Synesthesia - Tactile Feedback - Wearable Luminous Flexible

Fabric - Gesture Interaction - Biological Power Generation

Reflect to create an interface for your body. Consider how we use tools-how does this affect how your body extends into the tools around you? What possibilities do you see?

How are the materials of these sensors made? How are they handled? Who does this affect?

Can you see how they can generate a fair interface? What interface will you create to help you realize your vision for the future?

Plan 1. Painting in the space by hands.

Possibility:

If use sensors (muscle electrical sensors, bending sensors, etc.) to make a wearable sensor that recognizes hand movements.

For example, using digital methods to simulate painting. When the hand stretches out the index finger and the other fingers are clenched, it is recorded as a "brush" action. The space scene is displayed on the monitor in real-time through AR, and the trajectory of the drawn path is displayed in AR when the finger moves in the space. The right hand is defined as a brush tool, and the left hand is defined as a setting tool for modifying strokes and colors. The left hand adjusts the color of the brush by grasping and turning.

I also think that "gloves" need to have the functions to locate or recognize space to accurately locate the position of the brush in space.

Plan 2, Wearable health monitor

Possibility:

Smart fabrics-pressure-sensitive fabrics are composed of conductive threads and piezoresistive, and smart fabrics are composed of flexible PCB sensors and possible biological self-generation and electricity storage. It will try to as health monitoring and wearable electronic display fabrics. It may replace the existing fabric interface, in order to enhance the touch interaction or provide a new experience, such as a car center console, backpack surface, etc.

Plan 3. Flexible musical instruments

Possibility:

Use the same electronic textile technology as above to make flexible musical instruments. Such as piano, drums, etc. Electronic textiles can not only read digital signals, but also recognize analog signals. This can well control the strength of the scale when the instrument is played. This can be achieved anytime, anywhere to play music, you can also switch different tones at any time. Even using a simple conductive copper sheet, it can write a program with Arduino for performance. It can also use alligator clips to clip the fruit because the fruit is conductive. In this way, fruits can be turned into musical instruments.

Plan 4. Synesthetic Clothing (Number One Player)

Possibility:

On the basis of the electronic fabric, add some output functions, and the surface of the fabric can give a kind of tactile feedback to the skin by means of current or increasing pressure.

Interest sensors: myoelectric sensor, brain wave sensor, Lidar

Interest materials: tangible interaction, tactile feedback interaction, electronic fabric

Possible: game interaction, remote tactile interaction, remote sensing materials, tangible interaction, etc.

Consider what it means to have the skills to manufacture this equipment. How does it affect, collide and change your relationship with the consumer interface?

I hope to increase the possibility of tactile interaction to the traditional visual and auditory interaction level, just like the movie "Ready Player One". We can feel the physical touch and pressure remotely. The electronic fabric of synesthesia feedback will be a brand-new interactive medium.