International Conference on New Interfaces for Musical Expression

Moonment

Eslion Yao¹, Chuangchuang Fan²

¹eeslionyao@gmail.com, ²2528638913@qq.com

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1. PubPub Link

<https://nime.pubpub.org/pub/9598r1dn/draft?access=du502zbn>

2. ABSTRACT

MOONMENT is made up of a 60cm diameter brass ring and a 60cm long wooden structure with an acrylic panel and black walnut shell, with a Leap motion gesture sensor embedded in the middle and two LED strips on both side of the gesture sensor. When the **MOONMENT** is located with pedestal, it is equipped with a concrete mountain-shaped base.

The gesture sensor uses **Leap Motion**, and the software that connects gestures, music, and lights are **Max/msp**, **Ableton Live**, **Arduino**.

Inspiration

The same universe and the same moon, but in different regions and cultures, **the moon can be seen so differently**, and this gave birth to the idea of incorporating the concept of the moon's brightness, which is both warm and elegant, and unpredictable and crazy, into the design of *Moonment*.

I. Express emotion

The **change of human emotions** is so similar to the **change of the moon**, and it seems to be a characteristic of human beings that they like to put their emotions on other things. Therefore, it seems that people's sadness and happiness, the moon's cloudy and sunny days, music and light have the same characteristic of "**changing emotions**".

II. Gesture Interaction & Aleatory music & Acousto-optic interaction system

Applying this conceptualization to *Moonment*, it means that *Moonment* is just like the moon, through which people can express the opposite emotions of warmth or coldness.

The music played by different people through *Moonment* is also very different, and even the same person may not be able to play the exact same melody through *Moonment* in his or her lifetime, but every *Moonment* performance is unique and a surprise for the participants.

Interaction

I. Emotion - Front and back - Hue

Emotion is determined by a combination of tonality, timbre, and reverberation, and is divided into a cold and warm zone according to proximity, with a transition zone in the middle, the midrange.

When the participant's hand moves in the middle section, the output music is neutral in mood and the light color is biased towards the original color, when the participant's hand moves forward, the output music shifts to a sad mood and the light color becomes more and more biased towards the cool color and vice versa.

II. Constitute - Left and right - Color

When the participant's hand is in the area of the light color, it triggers the composition of the music corresponding to the light color. If the participant's hand makes a reciprocating motion across multiple light-colored segments, the constituent parts of these segments are triggered to output music simultaneously.

III. Range - Up and down - Brightness

For example, when the participant's hand moves in a downward direction, the pitch of the output music becomes lower and the brightness of the light color becomes dimmer.

The speed at which the participant's hands move up and down determines the speed of the random output of the notes, which in turn determines the speed of the music.

□For a more detailed description, please download this file.□

[moonment.pdf](#)

24 MB

3. PROGRAM NOTES

Everyone can play the piano, guitar, etc.

Why can't you play light?

So let's make light an instrument that can be played.

Gesture interaction is the core of music control, with lighting changes, to bring a unique auditory and visual experience.

It is a new type of musical instrument playing interaction system that combines accidental music and lighting art. The main purpose is to design a system based on sound and light interaction technology and incidental music that allows participants with no musical foundation to play instruments in line with mainstream musical aesthetics.

4. REQUIREMENTS

Equipment

- Computer with MacOS system installed.
- Max/msp 8, Ableton live 10, Arduino installed.
- At least two USB ports.
- Preferably configurable with speakers.

Space

Environmental requirements

- **dark** room, dark environment
- need to build an environment where the **Tyndall effect** can occur, usually using a fogger or smoke generator.

Placement conditions

- Can be hung or placed on the table (with base).

Performer(s)

Anyone, as long as he has played at least fifteen minutes.

Feasibility

Display in [OVO art Show - 2020 Xinghai Conservatory of Music Outstanding Talent Training Program Special Performance, on 11/27/2020](#)

5. MEDIA

Photos

User Scenarios

Overall display

Pedestal

Details

Video

Moonment

6. ACKNOWLEDGEMENTS

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