Charon – for Guzheng, Violin, Samples and Live electronics

YIXUAN ZHAO, Central Conservatory of Music, Beijing, China

1 PROGRAM NOTES

Charon is a celestial body in the solar system. In a tide-locked state, it and Pluto gradually becoming synchronous rotation from different orbits and rotation rates due to the influence of tidal forces over a period of time.

This work combines different sounds of Chinese instrument, Western instrument and Samples. Their process from struggle to integration is a metaphor that Charon is gradually affected by tidal forces. Technology in this work has created interaction among acoustic instruments, samples and sound effects. The connection among them develops the work. I believe that the tension and interaction are the fascination of the combination of sounds.

2 PROJECT DESCRIPTION

The work intends to use multiple methods to present the tension and cooperation between different timbres. In the music score of the work, different timbres and different performance techniques of Chinese and Western instrument are combined. At the same time, the use of technology adds new electronic sounds and increases the variety of interactions.

The work uses the following two completely different interaction systems which are completely controlled by the performers. In addition, the performance requires another person to operate the mixer to control the sound diffusion.

2.1 Guzheng Part

The system uses the information collected by Myo Armband to analyze performer hand gestures and trigger the sound effects like Resonant Filter, Pitch Shift, Reverse, Doppler and so on in real-time. The Myo Armband collects the information of the performer's left arm and sends it to Max/Msp by OSC message. There are two types of gesture recognition. One is the gesture recognition based on Myo. The other is the gesture recognition of Guzheng itself using machine learning.

2.2 Violin Part

The sound of the violin as a controller, which controls the movement of the samples in real-time. The performer uses the foot pedal to switch samples during the performance. The six samples from synth sounds are used in five sections of the work, and the control program is divided into two steps. First, different detectors are used in each section to analyze the violin sound data in real time, including pitch, rhythm, envelope, volume, etc. Second, write a control scenario that uses the data detected in the first step to control changes of samples such as speed, playback, sound effect parameters, etc.

Licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0). Copyright remains with the author(s).

Music Proceedings of the International Conference on New Interfaces for Musical Expression
NIME'20, July 21-25, 2020, Birmingham, United Kingdom