International Conference on New Interfaces for Musical Expression

Musical Chalk - Work in progress showcase

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Musical Chalk

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1. PubPub Link

<https://nime.pubpub.org/pub/swg87k5w/draft?access=amsdwsim>

2.Conference Abstraction

Musical Chalk is a design fiction that enrich chalk street-art performance with the spontaneous generation of music that fits the gestures of drawing. In this work-in-progress showcase, we present a web-based prototype that demonstrates the music generated in accordance with the gesture of drawing. Drawing with the base color “Chalk” will set a background and drawing with other color “Chalks” will build onto existing music. The current music fragments are generated in the Chinese pentatonic scale using a simple algorithm in order to produce coherent tones.

3.Requirements

The showcase can be viewed using any computer with a modern browser and tested with a mouse as a controller. The webapp is fully tested on Google Chrome and Mozilla Firefox. For a more authentic experience, the webapp is to be used with a pen mouse or a tablet with a stylus.

4.Program Description

In this work-in-progress showcase, we present a design fiction and a web-based prototype titled Musical Chalk. Chalk art is often done before an audience whether intentionally or not. It has been said that, “*street art, like performance art, is a kind of process-based art*” (Blanché [1]). The audience is interested in the process of making the art as well as the artifact. The audience marvel at how such a humble medium can become a work of art. Live music is also performance art, and is also process-based. Musical Chalk is designed to enrich chalk street-artists’ performance with the spontaneous generation of music that fits the gestures of drawing. The musical chalk will utilize optical location tracking or source-less motion tracking to detect the

gestures of the street artists. Similar works attempt to link a musical performance to drawing including Sounding Brush (Sen et al.[2]), JamSketch (Kitahara et al.[3]) and NAKANISYNTH (Nakanishi et al.[4]). These projects put the focus on either a) the mapping from gestures to synthesizer control to have a nuanced manipulation on timbre or b) the generation of melody in accordance with the gesture. Our musical chalks will generate improvised music using variants of precomposed sequences. The music generated will enrich the experience of the audience as they watch the performative aspect of street art.

The web-based prototype uses the mouse to simulate the strokes of the chalk. To easily generate coherent tones, the current prototype plays melody and sequences composed using a Chinese pentatonic scale. Movements made with the black color “chalk” set a background melody. Drawing with the colored “chalks” produces different scales or single notes, depending on stroke length. The background melody changes in speed and mode in accordance with the foreground notes. Each color of “chalk” is mapped onto a different musical instrument. The prototype allows us to fine tune our music-making algorithm. The next steps are a) making the physical prototype for the chalks; b) utilizing Internet of Things technology to send data to a centralized system; c) making the generation of music more coherent and sophisticated; d) evaluating the physical prototype with street-artists and their audiences.

5. Media

The design fiction of the physical device
that allows the tracking of drawing
gesture

The interface of the web-based demo

Video of Musical Chalk

Live demo : <https://zhangzit.pages.iu.edu/subsites/midiosc02/>

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7. REFERENCES

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