FeelSound: Interactive Acoustic Music Making

[Creative Showcase]

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Categories and Subject Descriptors

H.5.2 [User Interfaces]: Auditory (non-speech) feedback, Input devices and strategies

1. COLLABORATIVE COMPOSING

FeelSound¹ is a multi-user, multi-touch application that aims to collaboratively compose, in an entertaining way, acoustic music. Simultaneous input by each of up to four users enables collaborative composing. This process as well as the resulting music are entertaining. Sensor-packed intelligent environments form the target location of FeelSound, varying from the home to schools and other public spaces. Inhabitants of these environments can be creative and artistic through the act of composing music. We continue our previous research on entertaining through music [3] by bringing it to touch-sensitive tables. Composers stand around the FeelSound tabletop interface and, by touching the table with multiple fingers and hands, create acoustic samples. Each instrument is represented by virtual composer stones that a user touches. Upon touching such a stone, an input field is shown on which samples can be created by drawing shapes. Through user identification, multiple composers can create music samples simultaneously and compose these samples into a score. Each user may position any sample in the score, requiring social agreement from their fellow composers.

2. SET-UP

A top-projection Diamondtouch [1] touch-panel was used to detect the multi-touch input from up to four users [2]. The input fields in which users draw music samples consist of a hexagonal network of musical notes. Drawing shapes on this network produces samples, see Fig. 1. In this network,

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Figure 1: FeelSound: collaborative music making on a top-projection, multi-touch sensitive table.

which is known as a harmonic table², each cell represents a single note. The cells are arranged in such a way that makes musical sense. Related notes are placed next to one another, e.g., the next minor (e.g., A–C) and major thirds are diagonally to the left and right respectively while the next fifth note is directly above the current note (e.g., A–E). Figure 1 depicts a partial harmonic table. Every combination of music intervals has the same shape throughout the table, e.g., a minor triad (three note chord, e.g., A–C–E in Fig. 1) has the shape of a left-facing triangle. Samples are played from a continuously playing time line whenever the progress indicator intersects with a sample. We use a MIDI synthesizer to generate the acoustic samples as accurately as possible. The harmonic table provides the distinct notes that each touch shape describes in a sample.

3. REFERENCES

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²Online at <http://www.theshapeofmusic.com>, 11 September 2009.