Floral Melody: Flower Arrangement as Music Interface

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1 Introduction

Flower arrangement is one of famous traditional arts in Japan, and being enjoyed across the world now. People have been created the atmosphere in a room or represented one's mind by flower arrangement.
Meanwhile, with the advancement of technology, it has become easy for people to enjoy listening music or composing by themselves.
Flower arrangement and music are similar in that both art forms create atmosphere in a room or represent one's mind, these two arts have been different matters. To provide a bridge for flower arrangement between music, the author developed "Flower Arrangement Interface", which enables users to enjoy music by arranging flowers in a vase. This study aims to provide people novel form of flower arrangement and music experience.

2 System Architecture

The Floral Melody system architecture is as follows; Passive IC (Integrated Circuit) tags are embedded in each stem of flower. These IC tags are very small and thin (51.5mm height, 1.5mm width, 0.25mm thickness), so they fit into a stem of a flower. A glass vase is put on a woody table. An RFID (Radio Frequency IDentification) antenna is set under the table to detect tabletop IC tags. The thickness of the table is enough thin so that the RFID antenna does not miss detection of tabletop IC tags.When flowers are put in a vase, the RFID antenna under the table detects which flower is put in a vase and sends the information to a host computer. The computer creates sounds from the information of the combination of flowers.

Figure 1: *Floral Melody System Overview*

3 Application

The author developed two types of application of this system; an audio player and a tool for audio synthesis.

3.1 As an audio player

When the system works as an audio player, the combination of flowers decide which track is played. When the combination of flowers in a vase is changed, the system chooses a track from a list

Figure 2: *IC tag embedded in a stem*

arranged in advance by converting combination of flowers into a track number (for example, when flower A,B,and E are in vase and C and D are outside, this pattern of combination is converted into binary number 11001 once, and then converted into decimal number 25). The system sends the decided track number to audio player software and music changes.

3.2 As a tool for audio synthesis

When the system works as a tool for composition, real-time audio synthesis software (MaxMSP, ChucK) creates sound from combination of flowers. Some flowers strikes a note and others have a function of acoustic effects.

4 User Experience

Figure 3: *Floral Melody System in a cafe*

The author exhibited the system (in an audio player mode) in a cafe as an interior accessory for visitors. Almost all people who experienced the system asked the author about the mechanism of detection of flowers. This indicates that most people didn't notice the presence of detection system and this system keeps enough naturalness of flower arrangement even after embedding IC tags.

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