

Implementing an Interactive Digital Artwork Based on Concepts of Concrete Poetry

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Abstract: In this paper, we create a digital artwork based on the concept of concrete poetry. This work is to present interactive poems which are established by combining sounds and text-based poems. The artwork was exhibited from March 6th, 2010 to April 11th, 2010 in TaipeiDAC. Most audiences felt emotionally fulfilled while interplaying with this artwork.

Keywords: Interactive artwork, concrete poetry, digital poem, human computer interaction

Introduction

In the past, artists presented their artworks of domain or private space based on non-interactive visual creation. With the progress of information technology development, people can create art by using the digital multimedia rather than just doing in a traditional manner. That is, the way of art-creating has changed dramatically. Thus, the digital art creation becomes more lively and interesting. Furthermore, these materials/technologies enhance the artists' creativity. Artists are able to create artworks via technologies and multimedia; that is to say, they can create artworks with the multimedia besides the traditional way of creating arts, so they can create in more fashions to express their thoughts. Today, as the computing technology is more and more advanced, artists can create artworks with the help of the powerful computing which calculate the input information in real time. The process of artwork creation is charming because it is no longer a presentation of a phenomenon but a manifestation of an experience.

Interaction has been considered as an important characteristic of digital artworks. Nevertheless, the evolution of the aesthetic viewpoint is seldom mentioned. Above all, the experience of participating plays the essential role of creating artworks, which forms the "interactive aesthetics" gradually. What is stated above are crucial concepts in new media art [1][2].

Along the lines of "The End of Art", Arthur C. Danto states that the function of art imitation and reappearance has already disappeared. From now on, emphasizing the verisimilitude imitation is also redefined in the art history [3]. The text should be open to and created by readers. Moreover, the meaning of text is interpreted by readers instead of authors. This is the well-known "writable text" concept [4]0.

Stephen Wilson [5] supposes that interaction means the manipulator, browser interface and audience are able to have an effect on one another. Because of the changeable computer art Interactivity, Christine Tamblyn [6] and Binkley [7] consider computer art interactivity to be a form of conceptual art. In our work, based on concept of concrete poetry and the interaction between the audience and Chinese characters, we create digital poem.

Concept of Work

Oftentimes, we need some stimulus to refresh our memories and lake water is like memory. It needs outside force to cause rippling. That is, stimulus is to memory what outside force is to lake water. Similarly, in this work, pixels in frames are necessary because only changes of them can provoke reaction.

The image of a person is formed by the sense of sight and mostly the sense of hearing. We see the person and receive some information about the person from others. Then, our brains arrange these messages in a specific fashion. Therefore, the image of a person is depicted through words and partly via what we see. Likewise, this work plays a role of presenting the shape of someone or something through the arrangements of Chinese characters and thus the image of the work is shown.

Concrete poetry is the combination of poetry and painting. Therefore, we have to not only read the poetry with brain but also appreciate it with eyes and heart. Based on what Wang, Wei (8th century Chinese poet) said “Painting lies in the poetry and poetry also exists in the painting”, the highest level of reading poetry is reading it as admiring the painting. If we can experience what Wang, Wei said, we can enjoy poetry as well as paintings.

Implementation of Work

This work presents interactive digital poem by the movement of objects’ contour. In recent years, researchers and artists use the Processing programming language to create digital artwork [8]. A system (written in Processing [9][10]) is established where the digital poem is generated by combining sounds and text-based poems. In other words, the system acquires two kinds of inputs: (1) a sound file which was produced by the artist before, and (2) a modern poem which was written by the artist.

1. System Architecture

As for the development of the system and demo environment, we use a PC with Pentium (R) Dual-Core 2.6GHz CPU, Logitech Pro 9000 as the webcam, which captures 30 frames per second. The frame size is 640×480. In system flowchart (as depicted in figure 1), the webcam captures video frame and sends it to the system. The system extracts pixel in stream frame and detects contour (Contour Detection [9-12]) of stream frame in real time. If the system detects contour, it will extract RGB component of pixel and label the contour. Then, each pixel is labeled and turn into colorful Chinese characters which make up the poem. The system will generate a sound when the pixels of each frame reach a certain number. The image on the monitor presents a concrete poetry while people are interacting with the system.

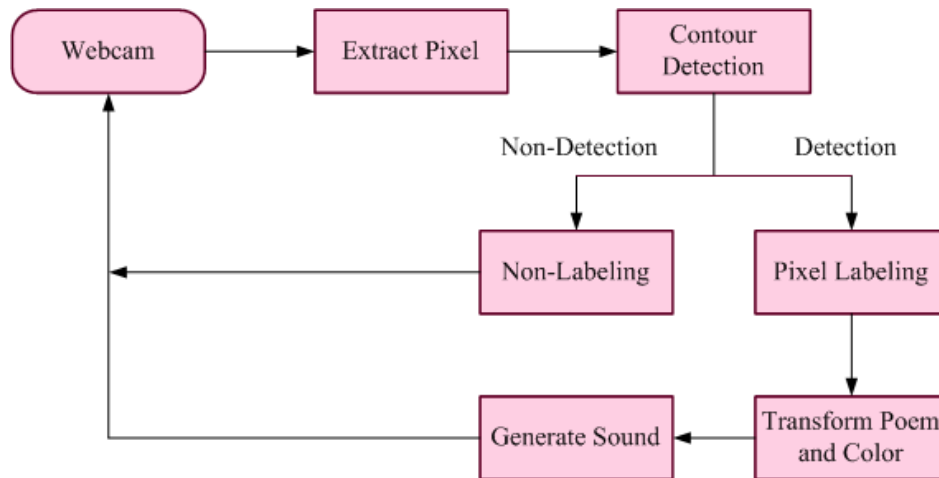


Figure 1: System flowchart.

2. System Implementation

Speaking of the installation of artwork, the PC is placed inside a white box. On the white box lie two lightweight fans in order to avoid overheating which may cause computer to crash, as Figure 2 shows. Besides, the HD LCD monitor is hung on the white wall and a black cuboid box is upon the monitor. The webcam is situated in the center of the black cuboid box, as Figure 3 shows. Figure 4 is an image of audience interacting with the system. A child and his father interacted with system and the child seemed very interested in interacting, shown as Figure 5. Figure 6 also shows how audiences interact with system. In Figure 6(a) there are three people in front of the webcam. As we can see in Figure 6(b), someone is taking a picture in front of the webcam. Seeing these interactions, we know that the image on the monitor generates a concrete poetry that combine with digital poem.

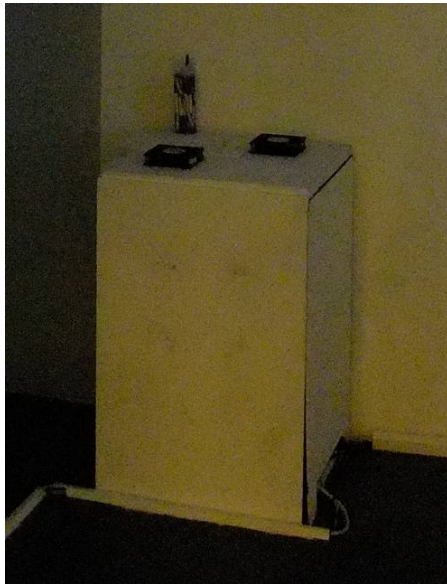


Figure 2: Installation of the white box



Figure 3: Installation of the monitor

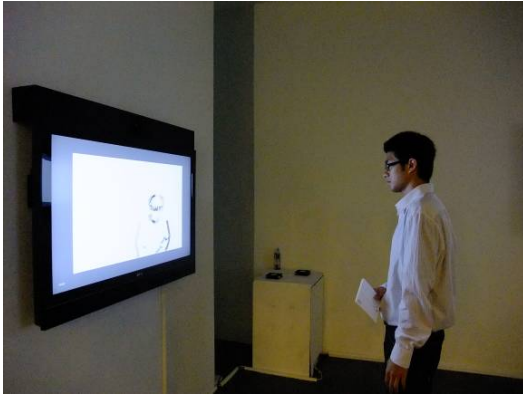
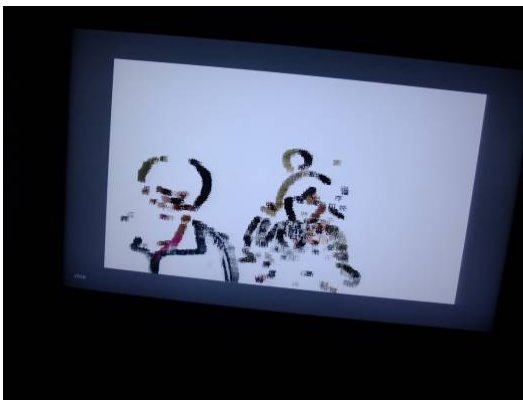


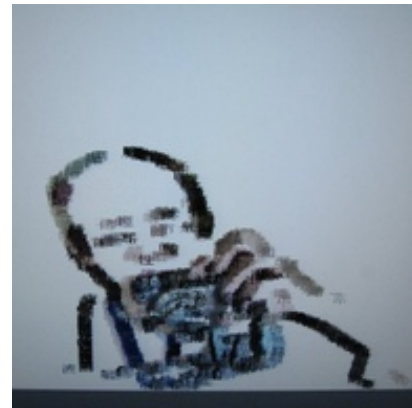
Figure 4:
The audience interacts with the artwork.



Figure 5:
The audience interacts with the artwork.



(a)



(b)

Figure 6: The concrete poetry

Conclusion and Future Work

We implement interactive digital poetry by contour motion of people or objects. The interactive digital poetry is an interesting and novel device for artworks which combine concept of concrete poetry. The artwork was exhibited from March 6th, 2010 to April 11th, 2010 in DAC. Most audiences felt emotionally fulfilled while interplaying with this artwork. The system was so robust that it never crashed during the exhibition. In the future, we will assess the interactive usability evaluation of this work and put this work on the Internet and apply it to more aspects, so that the audience can interact with digital poem on the webpage.

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