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Social Blobs, an Interactive Art Installation in an Urban Public Space

Abstract

In recent years, with the rapid development of technology and culture, digital media art has arrived into view. Taking “Social Blobs” of “Interactive Patina of Culture” as an example, this paper begins from the application of interactive art installations of digital media arts to urban public space, and introduce how to merge interactive art installations with public space and the historical and cultural background of public space.

Keywords

Projection Mapping, Interactive Art Installation, Interactive Patina of Culture

1. Introduction

Since 21st century, the popularity of computer technology has changed traditional art forms in multiple ways. At the right historical moment, digital arts including interactive art installations appeared. Representing new audio-visual experience in both expression forms and interaction forms [1], interactive art installations cover various subjects including design arts, computer graphic techniques, media hardware materials, web of things, etc., even related to biology, music, and physics. Hence, in order to make complete design and creation, it requires that the creator had multi-discipline background knowledge. In recent years, due to the efforts of artists, designers and architects, there are numbers of interactive art installations

used in global significant festivals and exhibitions like “ParticipArt[2]”, “KALI[3]” and “Tate (an art museum in UK)”. In previous reported works, we found that technology innovation is focused more. However, the deeper cultural connotation of the artworks is rarely concerned. It is a challenge for us to fuse culture and interactive art installation.

Unlike traditional arts, an interactive art installation, which is consisted of installation and artistic expression, is live art controlled by computers. In our design Social Blobs concerning the subject Interactive Patina of Culture[4], we use installation to acquire user’s action, and then influence user’s action through artistic expression method. The philosophy of the unity of human and computer is merged into the interaction of the installation, user’s action is acquired by program, the gathered data are artistically displayed after being calculated, and the participants may receive the most direct experience through projection techniques, therefore, the fusion impact and exploration of arts, culture and techniques are really achieved.

2. Design of Social Blobs

The theme of this time’s workshop is “Interactive Patina of Culture”, of which “culture” is mostly highlighted, meaning culture is the soul in the interactive design of urban public space, if the art works do not contain culture, they will lack ideological connotation. And the design will be worthless, and feeble even though it exist

in the city. While the word patina means continuousness and accumulation, that is, each participant may leave relevant “footprint” in the works. It is the theme’s key point as well as difficult point how to rationally and perfectly merge “patina” and “culture” into interactive installation design.

Based on the theme of this workshop, designers designed a set of interactive art installation in public space for Taicang-the holding location of this workshop. As the starting point of Zheng He’s seven expeditions to the western seas[5], Taicang owns plenty of culture accumulation, and is a natural bridge for Sino-foreign culture communication. The participants of this workshop are made up of teachers and students from Jiangnan University and those from Eindhoven University of Technology, during the communication, the creators found enormous cultural differences between China and Holland. For example, when going out, Chinese people enjoy walking together with several friend, and the distance between them may simply equal that of their personal relationship; while in Holland, the distance between people cannot just represent their personal relationship. Based on the extension of this case, the creators gain lots of design inspiration. As a design case of urban public space, the importance of interactive installation’s site selection is never less than its content design. Taicang has been a culture cradle since the ancient times, all sorts of talents gathered here, so it has a solid culture foundation and forms its own features, and all these constitute unique Loudong Culture, leaving age-old and outstanding culture treasures for people today, of which Zheng He’s seven expeditions to the western seas is the most dazzling one. Located in the center of traditional Taicang urban business circle, and taking Zheng He’s seven expeditions to the western seas as the whole square’s cultural background, Nanyang (means ocean) Square

is a shopping plaza which has the largest area, the most functions, and the most complete industry planning, therefore, it becomes the first choice for this case. During the early stage of interactive installation design, due to Nanyang Square’s unique position, the designers make an in-depth study on the crowd in the square, and classify them into three categories according to their behavior characteristics, which are highlighted with three colors, namely, red, orange, and blue, respectively. Blue is a kind of cool tone, standing for loneliness, so the blue color is used to stand for a lonely person walking in the square. Both orange and red are warm tone, standing for warmth and friendship, of which red is more powerful and used to stand for small groups that own leadership, while orange stands for ordinary small groups. Every small group is part of the society, so the creators also use the concept of cells to stand for every group. For the orange group, the size of relevant cells is determined by the cohesion among them. In China, unity means power, so the smaller the distance between the individuals is, the larger the cell will be, otherwise, it will be smaller. For the red group, Chinese leaders usually walk ahead of the group, and the number of the population following the leaders determines the size of the red cell, and also stands for the leader’s leadership skills.

As the largest comprehensive square, Nanyang Square has a round platform and a neat building facade (see Fig. 1), Projection Mapping technology is adopted to synchronically cast the crowd features on the round platform and building facade. To enable the interactive installation to possess more universal application, designers further abstract the cells into formal circles, but reserve their fusible features. When participants walk on the round platform, circles that have the same features with the crowd will follow the crowd under their feet, and the circle features may vary in color, size, and shape with the changes of the participants’ distance and relationship. When two crowds of participants meet or part with each other, their feature circles may merge or part with others, the feature circles’ colors may also change accordingly. The course of fusion and separation may the most simply and concretely reflect subtle changes of the relationship among the participators. Finally, when the participants walk out of the round platform, their relevant feature circles will continuously accumulate on the building facade, new feature circles will cover old ones, and the long-period feature circles

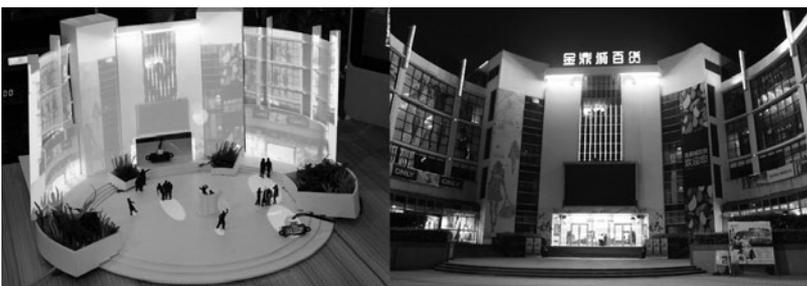


Fig. 1. Prototype of Social Blobs and night scene of Nanyang Square

may vanish with the accumulation of time, which is the so-called patina of culture.

3. Implementation techniques of Social Blobs

The Social Blobs interactive installation (see Fig. 2) is made up of three parts, namely, data gathering, data processing, and graphic output. In data gathering, sensors are used to obtain the participants' position data, Arduino[6] may obtain data from the sensors through simulation electric signals, pack and send to the computer, after the Processing[7] in the computer obtains the data, it will sort and process the participants and achieve abstract graphics, then these graphics are presented to the participants by projector by means of Projection Mapping.

The current popular Arduino development board and Processing programming language are adopted in combination (see Fig. 3) for the main control part of this interactive installation. Arduino is a handy, convenient and flexible open source electronics prototyping platform, including hardwares and softwares (Arduino IDE). It is widely used by artists, designers and fans. Arduino may sense the environment through all sorts of sensors, feedback and influence the environment by controlling lighting, motors, and other devices. The micro control units on the electronic board may participate program response, and connect with the interactive platform by using Arduino programming language.

4. Discussion

In order to make our work Social Blobs has a strong public participation, the most instinctive behavior of human is adopted. The trace left on the square by participant is displayed as an abstract visual social interaction. Making participants as the center of the whole interactive installation, ticking out deliberately artificial creation, this design creates abstract art patterns of interpersonal relationship which merge into cultural fundamental embodiment with the most natural and simple modes of participants random wandering. This mode that allows users to design may make the whole interactive installation full of interest and unpredictability, and let urban public space more vivid, full of humanity and cultural connotation. As the achievement achieved by the Sino-Holland Workshop, Social Blobs has won spectators praises and panel judges' consistent affirmation.

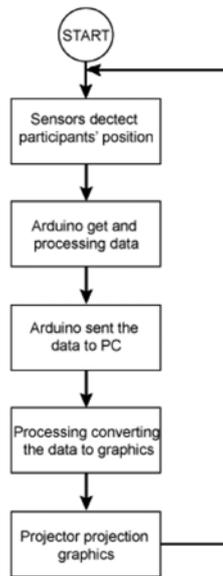


Fig. 2. Flow chart of Social Blobs

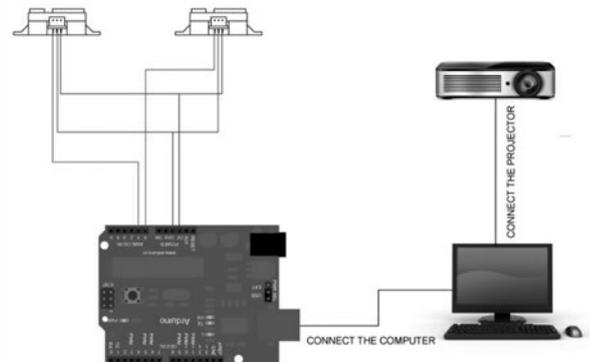


Fig. 3. Working principle diagram of Social Blobs

With the development of social culture and information technology, the new art form that uses of interactive art installations in public spaces will be gradually popularized and commonized. The workshop of "Interactive Patina of Culture" is an active exploration where interactive installation, public device, and historical and cultural background of the public space are merged together. However, as a kind of art form, interactive art installations should not always pursue technical innovation, but create distinguished design works by craftily using reasonable technical means from the perspective of cultural connotation and meaning.

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