The New Paradigm of Digital Art to apply Game Form: Digital Art Game

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Abstract. Experience in a virtual world helps to feel a new things that people cannot experience in a daily lives. That can be escape from reality and gives mysterious feeling. Theses virtual world make interaction with user and virtual world. Offering virtual environment is important elements that appear in interactive digital art. This paper will analyze about the new paradigm of digital art works that adapt a game component, consider an art works developments in a short future, organize an interactive art and art game and propose a concept about future art works.

Keywords: Interactive Art, Art Game, Game Form, Audience Response, Digital Art, Kinect Sensor, Media Art, Digital Art Work Concept

1 Introduction

1.1 Background and Motivation

Modern art express freely their feature to deny the method of traditional paints or sculpture after Dadaism. The new media technology appearance can digitize an expression mode of art and artists use the new media to their art works to create a digital art. In 1960s, artists were concerned to a machinery media and video art started from Nam Jun Peak took the lead in art field in 1970s and 80s. However, after 1990s, new media art based on computer influence has been raised, and not only artists but also an engineer who is skillful at computer plans a development of new media art.

Almost of the audiences who receive a Media Art that use computer technology approach to it with interest of a new interface. They shake their hands and arms here and there and stamp their feet in front of the responsive art works with visually or auditory. They slowly into responsive art work and try to find any new visual or auditory elements through their body movement.

This research started for investigate the experience time differences between interactive digital art with ˮgame formˮ and without ˮgame formˮ. Art game is a type of Serious Video Game, also, one of the Interactive new media art work. Art Game relate to digital art and software art. Art game is called art game or art house game [1] or less popularly called author game [2].

1.2 Research Scope

Art game is a game genre to express an artistic way from the first not for commercial purpose, it is a noncommercial purpose Indie game or interactive art made by artist genre game. In this research, among the interactive art installations, researched art works that usually use the audience's hand to change the visual and auditory effects and what kind of differences can be occur when apply game form into the art works is the main focus for this research.

2 Case Study Research

This chapter researched about new paradigm of digital art. For this 2.1 Section organized concept of art game and Section 2.2 organized about concept of game form.

2.1 Concept of Art Game

The "Art Game' term is used revolve around game related academia, Indie game developer and interactive art expert. Art Game is one of the artistic expression techniques and it refers to attempt to use a game [3]. Tiffany Holmes (School of the Art Institute of Chicago) introduced the art game is "game-inspired interactive art works" in her paper *[Art games and Breakout : New media meets the American arcade]* [4]. She concretely classified and defined the art game in her 2003 paper *[Arcade Classics Spawn Art? Current Trends in the Art Game Genre]*. She describes "Art Game is an interactive work, usually humorous, by a visual artist that does one or more of the following: challenges cultural stereotypes, offers meaningful social or historical critique, or tells a story in a novel manner." Moreover, to be specific art games "It should contain at least two of the following: a defined way to win or experience success in a mental challenge, passage through a series of levels (that may or may not be hierarchical), or a central character or icon that represents the player." [5]. For the related work is like the Fig. 1.

Fig. 1. Thomson & Craighead (Trigger Happy, 1998, www. Triggerhappy.org)

For these background descriptions, this paper describe the 'Art Game' is modify the exits game concept or use game form to create an art work, the paper researched and organized based on analyzed the case studies.

2.2 Concept of Game Form

The term of game "exciting jump" is derived from India European line "ghem". The word is combination of "exciting" means to feel fun or enjoyment mentally and "jump" represent motion verbal sense. The game' dictionary definition is comprehensive definition to play, amusement and entertainment [6]. Look at the game rule before the digital game, all games are made up with rule. Game starts when user learns the rule. Also it goes along according to the user's choice who follow the fixed rule and finally when the user reach the goal the game is finished. The game rule represents absolute power and it is a core element to organize a game world simultaneously. However, when the digital game time started the game rule evolves according to cultural, technical, social environment condition. This is a similar aspect with art to be in a digital age. Ebert insistence game cannot be an art because the game formal aspect has rule, point object and outcome. While, the field that want to admit game as art give cases of some arts that did not acknowledge in the past but now concede as an art, game also develop like the initial art form. Therefore, the meeting of digital art and game as an art can be an evolution digital art genre, digital art game.

3 Propose Digital Art Game

This chapter based on the case study research, propose new paradigm applied digital art work concept. Section 3.1 is about digital art work concept and Section 3.2 is about user scenario.

3.1 Digital Art Work Concept

Based on the digital art game concept earlier digital art works 'The Universe' is produced and will be tested. The digital art game calls 'The Universe' use a game form in an interactive art. How different when experience the art work with game form and without game form or any advantage/ disadvantage of the two different types of art work will be asked to the audience with simple questions on a survey sheet. Universe, the space of Universe is expressed relation with mother's womb. The subtitle 'We all have been....' is to explain the mean that we all passed the space literally. This art work was designed for experience the mystique of the space that we cannot remember. Game means play performance and process through fixed rule in a game to achieve a goal with a sense of purpose, it include all series of actions that can be gained any enjoyment and mental satisfaction in a daily life. This art works complete through human physical movements that enjoy game tool or method, and the purpose 'play' is same as game that it gives an enjoyment to people.

3.2 Narrative (User Scenario)

The audience will use the digital art game with below method [7]. We described the digital art game implementation purpose and contents about accessibility, immerses, fun and rewords in Table 1.

Table 1. Digital Art Game Implementation Purpose

Purpose	Contents
Easy accessibility to the art game	Galaxy images to represent 'The Universe'
Immersion	Immersion using Virtual Reality
Fun element like game	Pleasant entertainment elements as game play
Rewards	Offers rewards as game when complete art game play

And we described hardware spec and software spec about digital art game implementation in Table 2 and Table 3.

Table 2. Hardware Spec

Category	H/W Spec
CPU	Intel® CoreTM2 Quad CPU 2.40GHz
RAM	4GB
VGA	Nvidia GeForce GTS 250
Bluetooth Sensor	Bluetooth 4.0
Kinect	Kinect
Beam Projector	BENQ Beam Projector

Table 3. Software Spec

Category	S/W Spec
OS	Windows 7
Programming Tool	Open NI
Graphic Tool	Adobe Photoshop CS 5

For the future work, we are going to use Kinect sensor to recognize the use's movement and shows images or sound to them.
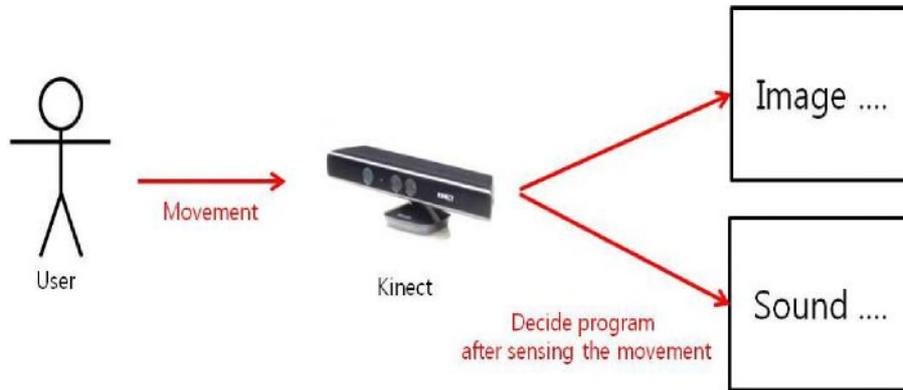
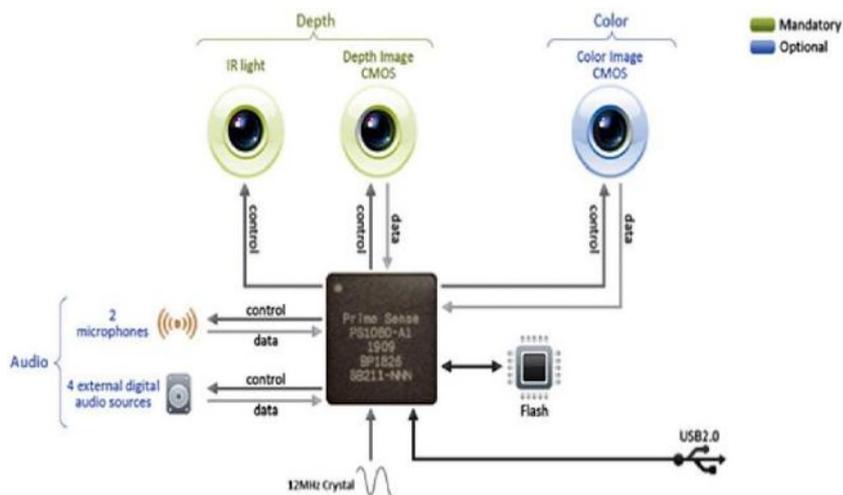Fig. 2. Contactless Method Process based on Visual Technology

Fig. 3. Kinect Sensing process (http://www.ifixit.com)

Through the analyzed result in this paper, Digital Art Game ˝The Universe˝ will be designed and tested using the proposed in section 3.2 for the future work.

Fig. 3 shows Kinect sensing process. Receive input value like color, depth, and movement, audio and deliver value through usb 2.0 to program. After that decide a right value at the program and output the result value of the work.

4 Conclusion

The Universe" is digital art game applies a game form. Using game form in the evolution digital art makes the interaction between the audience and the art works more than the digital art without the game form. Moreover, it gives form of game like rule, goal and reward to make the audience stay at the art work longer with their immersion.

For the future study raise the completion of the proposed work and produce tests and participations of many people. Finally, we will formalize the new digital art through the comparison and analysis of the exits digital art and digital art game.

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