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## **The History of Interactive Media art in China**

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### **Abstract**

Studying the new art design frontier discipline - interactive media art - this paper first considers what makes it a new art form. What are the characteristics that distinguish it from traditional art? Given that is a frontier discipline, the paper also discusses how the subject is institutionalized in art colleges and comprehensive universities in China, the current situation of art design and related courses in a different college, as well as the specific subject development to discuss the development of the discipline of art design and art technology. Why the theory of interactive media art is mainly put in the field of education and reflection on the history of interactive media art in China are analyzed.

**Key words:** interactive media art, traditional art, art education

### **1. Differences and connections between interactive media art and traditional art**

#### **1.1 Art and traditional art forms**

Art is a social ideology that reflects reality in various forms but sublimes from reality to be more typical and resonates with some people. It not only includes painting and sculpture, but also includes music, dance, literature, folk art, drama, film and...interactive media art. Art is the cognition or reflection of human beings to the world. For its subjectivity, it is not only the representation and perceptual cognition of the world, but also the rational cognition of the essence of the world through deep thinking. Art is the unity of the two. Art is not only a noun, but also a finished product of creation. It has its own characteristics. Traditional poetry, novel, music and dance are arts, so are the diversified creation of modernism and the creation of postmodernism. Art is not just a noun, a finished product of creation, such as a rare collection in a museum, or a music and drama bought into a performance hall. It is also a verb, a process that means "to put things together", such as performance and performance art. A canvas painted flat blue and the process of smashing the piano by the artist are also called art. This phenomenon of artistic creation involves the essence of artistic creation.

Art is an expression of thinking and creation. Works of art are mainly displayed through the basic characteristics of aesthetics, imagery and emotion.

Traditional art forms such as Chinese painting, oil painting, engraving and sculpture. It can be placed in exhibition halls or in public places, but its knowledge accumulation are mainly cultivated by schools. Therefore, it is mainly established in disciplines in China, represented by eight famous art academies. Education affects other things.

In traditional artistic creation, artists hold the monopoly right of artistic works and only limit them to the tools to convey information. The audience only needs to passively accept the works. The works can convey information to the audience in a one-way way without obtaining information from the outside world, so most works are confined to a static and one-way state. Of course, people are not blind to see, different audiences have different aesthetic standards for art, but the audience can not feedback their own understanding to the work of art, that is, the audience can not influence their own information to the work.

## What is interactive media art?

International scholars have different formulations. For example, Myron Kruger (1983) "Artificial Reality", Paul Milgram & Fuijo Kishino (1994) and Ginatatus V (2007) "Mix reality"<sup>1</sup>. Roy Ascott (2002) "cybernetics and telematics", Stephen Wilson (2002) "Information art", namely, such as robot, artificial life, gestures, touch, etc. Jay David Bolter and Diane Gromala (2004) "Digital Art", that is, the practice of graphic artists, using traditional video and audio, as well as computers, to create art installations and exhibits, whose works are usually commercial or popular. Levin Golan (2006) and Woolner, A (2009) mentioned interactive art in the article, and mainly explained computer vision. Wolf Lieser (2010) mentioned "Digital art", namely interactive objects and art in public space. Cynthia Breazeal (2010) "Blended reality".

Chinese scholars or researchers also have different ideas, such as digital media technology proposed by Chen Hanqing and Lv Jiefeng (2004), multimedia and network art proposed by Wan Yan, Wan Rong and Chen Shaohua (2007), and multimedia art design proposed by Hu Jie and Yan Chen (2009), mainly describing the composition of interfaces. Multimedia technology proposed by Wang Feng and Ma Hui (2009). Mainly explain software such as flash animation design and production. Zheng Zhan, Zhu Guobin, Zeng Yixin (2013) proposed digital media art. It is more about thinking about the society, such as feminism, cultural criticism and so on. Liu Shuming, Hou Yue (2014) put forward the design of digital media interactive elements.

However, the above-mentioned works or various suggestions and contents only mention how the works are designed by computer in the article, or just talk about art design cases, or the principle of information processing, without a comprehensive and thorough explanation from the perspective of art design, to help people understand, and how to apply in life and market. In order to make up for this deficiency, I proposed "interactive media art" in 2012 (Xu Ting, 2012).

Interactive art is different from traditional art. Artists give up the monopoly right of works, and the works interact with the outside world. More people can participate in the works, and the transmission of information between works and experiencers becomes two-way. Works can pass information to experiencers, who can pass information to works. Works of art can be constantly improved with the participation of different experiencers. This cycle of information between works and experiencers is characterized by interaction.

Different media, such as paper, radio, television, Internet and light, are used for artistic creation and expression, which results in interactive media art. Media art exploits interactivity in various art categories such as performance art, video art, animation art or network art. Interactive media art is present in all kinds of media art forms of staggered influence. It is based on the core concepts of interaction and of interactive technology and on the idea of the new media art<sup>2</sup>. Interactive media technology is the combination of modern information technology and art forms, with electronic technology, multimedia technology, sensor technology and detection technology. In addition, it is characterized by its multi-sensory nature, and can address itself to the experiencer's five senses of sight, touch, taste, hearing and smell.

It is not only to be found in real display space, but also in virtual reality, and in the relational space between man and computer. In the information age, the computer has its unique advantages of computer to computer networking, which is similar to the exchange of information and communication between human beings, and this allows for interaction between humans and machines, and machines and machines in large interactive networks.

The theoretical basis of interactive media art is first to be found in the work of Herbert Marshall McLuhan and of other media scholars whose work was elaborated on the basis of his theory of media which is associated with the senses. McLuhan argued that an ax can be viewed as an extension of the hands, the wheel was an extension of the foot, books are the extension of the eye, radio as an extension of the ear, clothes as extension of the skin, phonetic writing is an extension of the visual, and so on (Marshall McLuhan, 1964). Breaking through the original mainly existing visual or auditory sensory experience, it opened the idea of multi-sensory artistic experience, such that people can smell the work or touch it, in the way in which they perceive each other. This experience of art works and products thus enriches people's perception of things.

### 1.2 What is the relationship between interactive art and traditional art?

Traditional art is mainly found in museums and exhibition halls, and as mentioned earlier mostly consist of traditional Chinese painting, oil painting, printmaking, or sculpture. It can be based on canvas, paper media, but also on different media such as iron, bronze or stone.

It can be placed in a public space. Interactive art can also be found in exhibition halls as can most art form. In traditional art, it may be argued, interactive art already existed, because there is interaction between people and works. When viewing paintings the human eyes interact with traditional art works. Thus there is in traditional art an interactive dimension, especially in performance arts, such as when musicians are playing in concerts, this is also interactive art. However, strictly speaking, the audience or listeners are just listening or watching and players in their interactions are constrained by the musical partition. People cannot participate as experiencers in the works created by performers.

When here we refers to interactive media art we are particularly thinking of works that make use of electricity, light and of various forms of modern technology, such as electronic technology, sensor technology and of the combination of art form, so the traditional arts and interactive art have a close relation. In the course of development, overlap between art forms already existed in traditional art. In a sense then interactive media art is an extension of traditional art. That is, with the development of traditional art, of installation art and video art, because of the progress of technology, of the emergence of the Internet, a more interactive art became possible. Modern techniques, expressions of science and technology broke through the cognitive limits of traditional art, making art more diversified. Interactive art that combines technology with art, in such domains as virtual reality art, game art, robot interactive art, etc. In these interactive art works, people can experience and feel each work or product bring psychological or physical changes to themselves, and they can participate in and change the art works themselves.

## **2. The concept of interactive media art in China and its development in life and business**

People from different walks of life have different understandings of what interactive art is. Some think that interactive art can be classified either as art or technology, while some others think that interactive design, interactive technology, big data, virtual reality and so on have nothing to do with each other. Some people believe that this form of art is mainly oriented towards engineering and technology, while others view it as oriented towards art.

Interactive media art has been developing for more than 20 years. Before 2009, although some universities in China adopted the concept of interactive art design, it did not arouse much response. In 2009 however, professor Xin Xiangyang planned and organized the first Interactive Conference of International Design (ICID), which had national and international repercussions. He was later honored as "the father of interaction design in China".

He brought this concept from abroad to China, professor Xin, who has studied in an international context believed that design can be relevant to all aspects of life, and that interaction design can be truly planned and considered in social life. Therefore, after he returned to China, he served as the dean of the school of art and design of Jiangnan University, from which he later resigned, because the planning of interactive design could not be carried out and completely conceived in the education field.

In our conversation, he agreed with my idea of interactive media art and gave examples in this regard, such as interactive screen.

However, I said that the concept of interactive media art proposed by me is more of a knowledge in education and introduced to students, who learn in the course and re-recognize the interactive art design with the accumulation of previous Chinese art design knowledge.

Interactive art design can expand art design creation, and resort to new forms of knowledge and technology which can lead to new and different directions of developments and was to apply it in life.

For example, during the opening ceremony of the 2008 Beijing Olympic Games, Zhang Yimou staged a movable-type printing performance, in which the actors simulated the characters of movable-type printing, dancing up and down, and a striking "harmony" character was highlighted in the recital of ancient applets. The program has been unanimously recognized and highly praised by audiences at home and abroad. Or in Saudi Arabia's pavilion at the 2010 Shanghai world expo enters the exhibition hall through a conveyor belt, it will be sprayed with water mist. Famous singer Jay Chou travels through time and space to sing with Teresa Teng, a hologram, during the Spring Festival gala in 2017. In some parts of the program of the Spring Festival in January 2019, the singer thanks to Augmented Reality<sup>3</sup>(AR) interacts with virtual images. Another example, is that in 2009, an engineer cooperated with me to make interactive screens in Qingdao Tianmu city and Jinan huiquan square.

At that time, in China, the main advertisement was still graphic design or film and television, so after this project was completed, the response in these cities was quite good: many children like to play with the screens and ground projections, and it also attracted tourists and local people.

In the market, intelligent products such as interactive toys, interactive TV, interactive games, interactive device display and other new commodity are all popular forms of interactive media art. At recently many factories, shopping malls and hotels have begun to use intelligent, automated interactive art design products. Thus interactive media art is not only an academic discipline but more and more a social phenomena in China.

### **3. The development history of Chinese art and design discipline reflected from the development of interactive art discipline**

Interactive art is a frontier subject in the field of art and design, it was initiated by the foreign scholars Roy Ascott<sup>4</sup> and Tan Liqin<sup>5</sup>. Together with Lu Xiaobo<sup>6</sup> and Xin Xiangyang they organized the first ICID, which was jointly hosted by Carnegie Mellon university, Tsinghua University and the Hong Kong Polytechnic University. It has held three sessions (2009 Tsinghua University, 2011 Hong Kong Polytechnic University, 2013 Northwestern Polytechnic University). The reason why the first session was held in Tsinghua University was that the purpose of the meeting was the hope that Chinese education circles and enterprises should begin to understand the importance of that this major emerging interdisciplinary discipline of digital media art in China, and to cultivate more interactive design talents for China.<sup>7</sup> However, because it is relatively new both in China or internationally, there are still relatively few researchers working on it.

In 2012, I proposed a relatively comprehensive interactive media art theory in the field of education. It includes definitions, categories, how to realize interactive media art through artistic design and computer methods, the relationship between interactive media art and traditional culture, sexual culture, children's education and other social phenomena, and its application in life and business. Because it is a cutting-edge art design form in China as one of the emerging disciplines of art design, it developed step by step in Chinese education as an art design discipline.

The development of interactive art theory reflects the development of art design in education which began as art design, later came graphic design, and media art design. Media art design includes film and television design, web design, animation design, and interactive art design. Later, a series of conferences on "interactive design experience day", "international experience design conference" and "service design conference", expanded interactive art design from the cooperation between art design academia and enterprises to various fields.

Different scholars or artists put different emphasis on different aspects of the concept, some are inclined to art, some are inclined to technology. The diversity of the definition of interactive media art design also reflects the differences in the knowledge proposed by different textbooks or books from different art colleges and comprehensive universities, reflecting different education levels and discipline construction of different schools in China.

In eight academies art design is the core discipline with priority given to with art and professional design (Table1), some comprehensive university have opened art design programs, but they remain in the background of the discipline's development following the lead of the eight art academies (Table2). The national academy of fine arts and the integrated university of art design discipline constitute the main force in art design education. They offer digital media and related courses (Table3) . The last table shows the development of art design in Chinese education circle, and how the establishment of science and technology art was a major step by step, consistent with recent transformation in media art and society (Table4).

The core of Chinese art, design and arts and crafts is led by eight fine arts colleges and the Tsinghua academy of arts and crafts(formerly the central academy of arts and crafts) . The main sources of knowledge in China are the dissemination of school education and the expansion of central government to local areas. However, these colleges orientation change with national policies and the development of social needs and demands in general. They evolved from traditional 'pure' art to graphic design, architectural design, and later media art.

**(Table 1) The eight fine arts colleges of art and design**

Name of institution in English/pin-yin	Name of institution in Chinese characters	City
Central Academy of Fine Arts (CAFA)/Zhongyang Meishu Xueyuan	中央美术学院	Beijing
China Academy of Art/Zhongguo Meishu Xueyuan	中国美术学院	Hangzhou
Guangzhou Academy Of Fine Arts (GAFA)/Guangzhou Meishu Xueyuan	广州美术学院	Guangzhou
Hubei Academy Of Fine Arts/Hubei Meishu Xueyuan	湖北美术学院	Wuhan
Lu Xun Academy of Fine Arts (LAFA)/Luxun Meishu Xueyuan	鲁迅美术学院	Shenyang
Sichuan Fine Arts Institute (SFAI)/Sichuan Meishu Xueyuan	四川美术学院	Chongqing
Tianjin Academy of Fine Arts/Tianjin Meishu Xueyuan	天津美术学院	Tianjin
Xi'an Academy of Fine Arts/Xi'an Meishu Xueyuan	西安美术学院	Xi'an

**Table 1: The eight fine arts colleges of art and design**

Design is mainly encountered as the discipline of art and its education includes as a major graphic design (visual communication design), environmental art design, industrial design, fashion design, digital media art and so on. Of course, it also has a broad sense of design, namely planning .

No matter from the central to the local, each province's discipline planning is different, and the school level is different, showing diversified development. In the field of art design, the knowledge system is mainly diffused from art schools to comprehensive universities.

**(Table 2) Comprehensive universities offering art and design majors**

Name of institution in English/pin-yin	Name of institution in Chinese characters	City
Tsinghua University/ Qinghua Daxue	清华大学	Beijing
Inner Mongolia University/Neimenggu Daxue	内蒙古大学	Huhehaote
Liaoning University/ Liaoning Daxue	辽宁大学	Shenyang
Jilin University of Arts/ Jilin Yishu Xueyuan	吉林艺术学院	Changchun
Soochow University/ Suzhou Daxue	苏州大学	Suzhou
Zhejiang University of Technology/ Zhejiang Gongye Daxue	浙江工业大学	Hangzhou
Nanchang University/ Nanchang Daxue	南昌大学	Nanchang
Wuhan University of	武汉理工大学	Wuhan

Technology/ Wuhan Ligong Daxue		
Xiangtan University/ Xiangtan Daxue	湘潭大学	Xiangtan
Sun Yat-sen University/ Zhongshan Daxue	中山大学	Guangzhou
Guangxi Arts Institute/ Guangxi Yishu Xueyuan	广西艺术学院	Nanning
Shandong University Of Art & Design/ Shandong Gongyi Meishu Xueyuan	山东工艺美术学院	Jinnan
Dalian Art College/ Dalian Yishu Xueyuan	大连艺术学院	Dalian
Inner Mongolia Normal University/ Neimenggu Shifan Daxue	内蒙古师范大学	Huhehaote
Shanghai Jiao Tong University/ Jiaotong Daxue	上海交通大学	Shanghai
Nanjing Arts University/ Nanjing Yishu Xueyuan	南京艺术学院	Nanjing
Shandong University Of Arts/ Shandong Yishu Xueyuan	山东艺术学院	Jinan
Hunan Normal University/ Hunan Shifan Daxue	湖南师范大学	Changsha
Shantou University/ Shantou Daxue	汕头大学	Shantou
Shenzhen University/ Shenzhen Daxue	深圳大学	Shenzhen
Yunnan Arts University/ Yunnan Yishu Xueyuan	云南艺术学院	Kunming
Hunan University of Technology/ Hunan Gongye Daxue	湖南工业大学	Zhuzhou
Jilin Animation Institute/ Jilin Donghua Xueyuan	吉林动画学院	Changchun
Nanchang Normal University/ Nanchang Shifan Xueyuan	南昌师范学院	Nanchang

**Table 2: Comprehensive Universities/ Institutes offering art and design<sup>8</sup>**

This is the case with art and design majors opening in 2019. For example, Qingdao university(青岛大学), Qingdao University of Science and Technology(青岛科技大学)and Qingdao Agricultural University(青岛农业大学) now all offer art & design majors. Dalian Polytechnic University(大连工业大学) and Dalian University of Technology(大连理工大学)also offer art design majors. Thus there now are many universities in China have art and design academy. With the development of technology and the employment needs of students, digital media art was added to the curriculum. Its academic basis is media, but many disciplines, scholars and researchers participate in its development from different perspectives, for some more artistic, some more technical.

**(Table 3) Various famous universities or colleges in China have established art and designs or related subjects**

Name of institution in English/pin-yin	Name of institution in Chinese characters	Discipline	Curriculum	Date
Guangzhou Academy of Fine Arts/Guangzhou Meishu Xueyuan	广州美术学院	New media art	<i>interactive media, digital media and spatial forms</i>	1999
Communication University of China/Zhongguo Chuanmei Daxue	中国传媒大学	Academy of animation and digital arts	animation, digital media art game design and network multimedia teaching research	2001
China Academy of Art/Zhongguo Meishu Xueyuan	中国美术学院	New media art	photography, video, the Internet, sound, behavior	2003
Tsinghua University/Qinghua Daxue	清华大学	Department of information arts and design	information design and animation design	2005
Dalian Polytechnic University/Dalian Gongye Daxue	大连工业大学	Digital media art	video art, animation, interactive media art	2005
Jiangnan University/Jiangnan Daxue	江南大学	Institute of digital media	digital virtual display design, digital entertainment technology, digital media interactive design, network media general software and tools	2007
Xi'an Academy of Fine Arts/Xi'an Meishu Xueyuan	西安美术学院	Department of film and television animation	animation, photography, film and television photography and production, drama, film and television art design and digital media art	2009
Sichuan Fine Arts Institute/Sichuan Meishu Xueyuan	四川美术学院	New media art	photography and new media art (painting)	2010

**Table 3: Famous universities or colleges in China that established art and designs or related subjects**

As a result, we can only see that very few schools have established directions or courses related to interactive art. For example the Central academy of fine arts<sup>9</sup> have not set up the discipline, Chinese academy of fine arts<sup>10</sup> offers video art or other art forms only.

Since 2012, the ministry of education has opened a number of arts and technology disciplines for interdisciplinary exploration. In 2018, China's ministry of education issued a directive to promote cultural inheritance and innovation, and promote the construction of artificial intelligence (circular of the ministry of education on the issuance of artificial intelligence innovation action plan for institutions of higher learning, 2018). In recent years, it has encouraged and vigorously advocated the integration of multiple disciplines, such as art and technological innovation.

**(Table 4) In 2012, art and science and technology was a special major in the catalogue of undergraduate majors issued by the ministry of education**

Name of institution in English/pin-yin	Name of institution in Chinese characters	City
Tsinghua University/Tsinghua Daxue	清华大学	Beijing
China Academy of Art/Zhongguo Meishu Xueyuan	中国美术学院	Beijing
Communication University of China/Zhongguo Chuanmei Daxue	中国传媒大学	Beijing
Beijing Institute of Fashion Technology/Beijing Fuzhuang Xueyuan	北京服装学院	Beijing
Dalian Polytechnic University/Dalian Gongye Daxue	大连工业大学	Dalian
Shandong University of Art & Design/Shandong Gongyi Meishu Xueyuan	山东工艺美术学院	Jinan
Guangzhou Academy of Fine Arts/Guangzhou Meishu Xueyuan	广州美术学院	Guangzhou
Xi'an Academy of Fine Arts/Xi'an Meishu Xueyuan	西安美术学院	Xi'an

**Table 4: The major offered by some famous universities in 2012. Source: science and technology professional<sup>11</sup>**

From the continuous offering of interactive art courses in the eight art schools and in comprehensive universities we can see that interactive art which started as a new domain was gradually promoted as a full fledged disciplines by more and more universities and get an idea of its growing importance.

As the above tables show, interactive media art is becoming quite popular in Chinese education throughout the country and now reaches a large number of people.

Even if interactive art design was introduced into China from abroad, today the vast majority of scholars and students' understand it to education of art design major in China, that is why it is important to trace the development of Chinese art design education.

Of course, why is it considered for art and design? The reason as follows:

1. From the perspective of international development. With the development of globalization, the

development of science and technology, the sharing of resources, and the cross-integration of cultures, fields and forms of various countries, art has been gradually considered as a form of integration of science and technology, which has injected fresh blood into people's lives, enriched people's lives and brought more possibilities.

Myron Krueger<sup>12</sup> developed Metaplay to integrate visual, sound, and response technologies into one framework. 'Videoplace' has been extensively exhibited in the arts and sciences of the United States and Canada, as well as in Japan. Levin Golan works on a variety of interdisciplinary projects. CMU Creative survey, Tmema project development, Creative Studio of Inquiry send dick photos to the moon program.

Carnegie Mellon's Moon Arts Ark received an abundance of willing of dicks. John Maeda<sup>13</sup> said, I believe that art and design have the potential to transform our economy in the 21st century, just as science and technology did in the last century. (John Maeda, 2014)

2. From the perspective of China's development. Originally, this concept was introduced into China, which is a very new term. The Chinese government recognizes its rich market potential. Premier Li Keqiang (2015) put forward the "Internet accelerated speed" action plan for the first time in the government work report at the third session of the 12th National People's Congress. Knowledge system is major in education, it has mentioned the importance and the significance, is the major in art design discipline, in line with the higher education department of professional setting and the requirements of teaching steering committee, came to the forefront of artistic design education in China.

3. At the school level. It integrates art with biology, science and technology, machinery and other disciplines to create new art forms, which itself broadens the scope of artistic creation.

For example, the kaleidoscope works created by students are arranged in the exhibition hall, and students can participate in each kaleidoscope. Students can also design products, such as the development of mobile phone app, students can conceive a plan, design the Buddha worship game, mobile phone users can worship Buddha every day.

It will also create jobs in the arts and technology. Previously, visual communication corresponded to advertising companies, etc., and digital media art corresponded to film and television companies or game companies, etc. In recent years, there has been "data visualization", which presents some information and data with artistic design. Students studying art have more opportunities to cooperate with engineers after graduation than before.

The development of interactive art has a large potential market, because its form is novel and interesting. With the development and popularization of artificial intelligence technology, it brings more and more convenience to people. Therefore, by the majority of consumers more and more acceptance.

Now in China, almost everything is paid by mobile phone in most places, and there is no need to carry cash. Many hotels, apps, etc., use face recognition. Such as robot service.

Therefore, with the development and popularization of science and technology, intelligent art, interactive art design form will start from the emerging things, with more and more people's attention, will step into and influence, enrich our life.

#### **4. Conclusion**

This paper aims to study and discuss the development of interactive media art in order to distinguish and connect interactive art and traditional art. Scholars at home and abroad have different definitions of interactive media art, but as a new cross-art design form, it has great potential in the development of social life.

Interactive media art has been introduced into China from the international stage. As a discipline, its knowledge system is mainly invested in the field of education, which has been developing for more than 20 years. Its theoretical development can be traced back to the establishment of Chinese art and design disciplines, including the most core eight fine arts academies and comprehensive universities. From the establishment of art design majors in these national colleges and universities, to the development of digital media art, to the development of a few art science majors and the future promotion of education and other sectors. This paper expounds the necessity of emerging interactive media art discipline, analyzes the reasons

why the knowledge system is mainly placed in the art design of education circle. It enriches our life and has broad prospects for development.

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<sup>1</sup> Mixed reality, sometimes referred to as hybrid reality, is the merging of real and virtual worlds to produce new environments and visualizations where physical and digital objects co-exist and interact in real time.

<sup>2</sup> New media art: mainly is the medium of "optical" and "electronic" medium as the basic language, based on digital technology as the core of a kind of interactive, strong comprehensive art.

<sup>3</sup> Augmented reality (AR) : is a kind of real-time computing the position of the camera image and Angle and combined with the corresponding image, video, 3 d model technology, this technology's goal is the set of virtual world on the screen in the real world and interact. This technique is put forward in 1990. As the portable electronic products of CPU computing ability to ascend, Augmented reality applications is expected to more and more widely.

<sup>4</sup> Roy Ascott: an artist, who works with cybernetics and telematics, on an art which is technoetic, as a foreign scholar, he is one of the pioneers who introduced the interactive theory into China.

<sup>5</sup> Tan Liqin: professor at Rutgers University in New Jersey, chinese-canadian digital artist. Early creative experimental animation. Lectures at many universities.

<sup>6</sup> Lu Xiaobo: founded the information arts department of Tsinghua University. Lu Xiaobo is the director and one of the speakers of the first Tsinghua international interactive design conference.

<sup>7</sup> Xin Xiangyang: interaction is a micro organizational design behavior. Retrieved July, 3rd, 2019 from: [https://mp.weixin.qq.com/s?\\_\\_biz=MzI5NzY4MDA4MQ==&mid=2247484181&idx=1&sn=d14649cd206c2f8928f1f15d03f66a3e&chksm=ecb02eabdbc7a7bd14ddf686018d04d272755b257a8e430f599989ca384177bf3f41e4e0fba8&mpshare=1&Scene=1&srcid=&pass\\_ticket=rFrNjFJNcByfRsUFvmBtIvDyrhRb6xYdn0NGGzUdg#%20fgstatjmdhy69fngalcpke9rd](https://mp.weixin.qq.com/s?__biz=MzI5NzY4MDA4MQ==&mid=2247484181&idx=1&sn=d14649cd206c2f8928f1f15d03f66a3e&chksm=ecb02eabdbc7a7bd14ddf686018d04d272755b257a8e430f599989ca384177bf3f41e4e0fba8&mpshare=1&Scene=1&srcid=&pass_ticket=rFrNjFJNcByfRsUFvmBtIvDyrhRb6xYdn0NGGzUdg#%20fgstatjmdhy69fngalcpke9rd)

<sup>8</sup> 2019 which universities offer art and design majors. Retrieved date:19th, Mar, 2019 from: <https://www.dxsbb.com/news/11576.html>

<sup>9</sup> Central academy of fine arts in 2018 opened the art and science and technology major . Retrieved June, 3rd, 2019 from: <http://cat.cafa.edu.cn/>

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<sup>12</sup> Myron Krueger is considered one of the first virtual reality and augmented reality researchers.

<sup>13</sup> John Maeda is an American executive, designer and technologist.

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