



УДК 7.05: 687.1

## RESEARCH ON THE APPLICATION OF VIRTUAL REALITY TECHNOLOGY IN THE DISSEMINATION OF TRADITIONAL CLOTHING ART AND CULTURE

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*Against the backdrop of the Fourth Industrial Revolution, innovative developments in the fusion of physical reality and virtual reality have been initiated. This article aims to explore the value of virtual reality technology in the dissemination of traditional clothing arts and culture, and to seek new solutions to the problem of the disconnect between traditional art and culture and modern society. The article argues that NFT digital fashion collections not only cater to the lifestyle of contemporary young people, but also promote innovation and transformation in the fashion industry, providing new possibilities for the sustainable development of traditional clothing arts and culture.*

**Key words:** *NFT digital collections, virtual clothing, metaverse, digital economy, traditional culture, Sustainable fashion.*

### INTRODUCTION

Traditional art and culture are an important part of a country or region's cultural heritage, carrying the genes of ethnic culture and historical memory. It is a country or region's cultural soft power, which can enhance its discourse power and influence in international cultural exchange, promote innovation and upgrading of local cultural industries, and promote the development of local cultural industries towards high-end, specialization, and internationalization, playing an important role and significance in contemporary society. However, the current disconnect between traditional art and culture and modern society is prominent, and there are differences in lifestyles, values, and aesthetic standards between them. Therefore, when traditional clothing culture is disseminated, it needs to be transformed and innovated according to the needs and acceptance of modern society to meet the needs of the audience. Under the influence of a series of technologies related to the Fourth Industrial Revolution, including artificial intelligence, blockchain, virtual reality, and the metaverse, the art field has gradually shifted towards trend art dominated by consumerism, and the clothing art field has entered a new era of physical reality and digital virtual integration. New areas such as NFT virtual clothing, game clothing design, virtual exhibitions, and human-computer interaction have become important directions for innovation and development. Virtual reality technology enables people to obtain new artistic experiences and modes of



thinking, providing new ideas for the creative transformation of traditional art and culture to achieve sustainable fashion development.

### **PURPOSE**

This study aims to analyze the application value of digital fashion collections designed based on virtual reality technology in the dissemination of traditional clothing art and culture and explore the trends and paths of the dissemination of traditional clothing art and culture in the new era.

### **RESULTS AND DISCUSSION**

Each industrial revolution represents a significant developmental stage for humanity and has given rise to different aesthetic demands. The transformation of lifestyle and changes in aesthetic demands directly impact the style and concept of clothing as well as the tools used to produce clothing [1]. As an emerging technology, virtual reality has penetrated all aspects of clothing design. This paper analyzes the application value of NFT virtual clothing digital collections using the example of The Fabricant.

In 2016, Kerry Murphy and Adriana Hoppenbrouwer "founded The Fabricant", in the Netherlands, and launched their website in 2018. It is the world's first digital fashion company, dedicated to pioneering the future of pure digital clothing. They created the concept of intangible fashion and fundamentally established an industry. In 2019, the first NFT (non-fungible token) virtual clothing was launched, called "Iridescence," which was auctioned for as high as \$9,500, marking the combination of NFT art and the fashion industry. The emergence of virtual fashion has subverted the traditional fashion industry and brought new opportunities for the development of clothing brands. In December 2020, a digital collection named "Quantum" was sold for over \$1.5 million, making it one of the highest-priced digital collections ever sold on The Fabricant platform. This high-priced transaction undoubtedly demonstrates the platform's influence and attractiveness in the digital collection market, and has attracted the attention and coverage of many well-known media outlets such as The New York Times, The Wall Street Journal, and Forbes, further expanding The Fabricant's visibility and influence in the art and digital currency industries. In 2020, human society reached a critical point in virtualization, and 2021 has become the "first year of the metaverse." The metaverse is a state of mutual fusion in a shared network space in three modes of physical reality, augmented reality, and virtual reality [2]. Under the influence of the metaverse trend, research related to NFT virtual clothing digital collections has begun to show a rapid upward trend.

The NFT digital fashion collection designed by Stephy Fung, a renowned designer from "The Fabricant", a London-based 3D digital fashion artist, is analyzed as follows:

1. Innovation (fig. 1, a, b): Stephy Fung's design style is highly innovative as she attempts to combine traditional clothing elements with modern technology, breaking the boundaries of traditional clothing. Her design works often feature exaggerated, futuristic elements such as bold colors, delicate curves, and complex geometric shapes that are seldom seen in traditional clothing.

2. Traditionalization (fig. 1, c): The inspiration for the design of this collection comes from long, flowing traditional Chinese clothing elements such as the Hanfu.



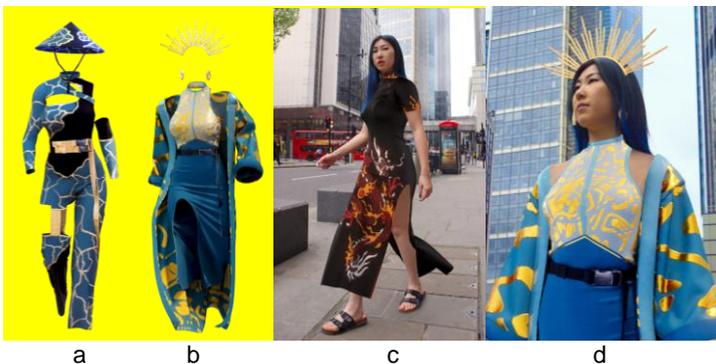
Asymmetric shaping and cutting are used, while Hanfu aesthetics are merged with tight-fitting, modern styles commonly found in technological clothing. Other Chinese traditional elements, such as the dragon, phoenix, and lotus flower, are also incorporated into her designs, but she integrates these traditional elements with modern technology to create a new fashion style. This style retains the essence of traditional culture and is ingeniously combined with modern fashion, showing a high degree of innovation and artistry.

3. Digitization: The design work extensively uses digital technology, such as MD modeling, virtual reality, and animation, to simulate neon effects that physical clothing cannot achieve, making her designs more modern and technologically advanced. She is skilled at using digital technology to showcase the details and features of clothing designs, thereby attracting more young people's attention.

4. Commercialization: This collection of designs is based on blockchain technology's NFT digital artwork. NFT represents non-fungible tokens, each of which is unique and can record ownership and transaction history of artworks, promoting the development of the cultural industry towards high-end, professionalism, and internationalization.

5. Environmental protection: This series of design works can reduce the cost of experiencing traditional art and culture for audiences. Virtual reality technology can eliminate geographic limitations, allowing audiences to experience traditional art and culture without leaving their homes. Applying this technology to the promotion of traditional art and culture can lower the cost of experiencing it for audiences and make it easy for them to appreciate the charm of traditional art and culture, reflecting the sustainable fashion's environmental protection concept.

6. Interactivity (fig. 1, d): In the metaverse and virtual worlds of social networking platforms, users can express multiple aspects of their identities through digital fashion, showcasing their personalities and aligning with contemporary young people's lifestyles, attracting more young people's interest and attention.



**Fig. 1.** The NFT digital fashion collection designed by Stephy Fung:  
a-b –Innovation, c – Traditionalization, d – Interactivity



In summary, Stephy Fung's work pays tribute to Chinese traditional culture, exploring and expressing her British Chinese identity. She hopes to merge modern technology with Chinese traditional elements and have a high influence and appeal in the virtual fashion design field. Her works have been featured and promoted on other virtual fashion platforms and media such as The Diigitals, FashionUnited, Vogue Business, and The Artling, receiving wide recognition and attention, proving her strong creative ability and design level, and having strong reference value for the dissemination of traditional clothing art and culture. Digital clothes in the virtual world give up physical functionality, expanding their formal and symbolic meaning. The virtual world and life have become another form of existence [3].

### **CONCLUSIONS**

Under the influence of the background of the Fourth Industrial Revolution, all walks of life have entered a new era of the fusion of physical reality and digital virtualization, opening up a new round of innovative development, in which NFT virtual clothing, digital fashion collections and other innovative developments have become important directions. Currently, there are differences in traditional art and culture in terms of lifestyle, values, aesthetic standards, and other aspects of modern society. To address these issues, it is necessary to actively embrace the changes and diversity of the times and demands. Young people are the driving force behind the dissemination of traditional culture and can use modern technology to present traditional culture in a more vivid form, attracting more young people's attention and participation. Compared with traditional forms of artistic expression, NFT digital fashion collections have advantages in innovation, tradition, digitization, marketization, environmental protection, interactivity, etc. Therefore, using virtual reality technology to innovate the forms of traditional art and culture and inject new era connotations is not only beneficial to the inheritance and development of traditional art and culture itself, revitalizing it, but also to the dissemination of traditional art and culture, stimulating the public to contact, understand and recognize outstanding traditional art and culture from around the world.

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