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DIGITAL FASHION DESIGN INNOVATION BASED ON INTANGIBLE CULTURAL HERITAGE

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This paper investigates the application of augmented reality (AR) experience design in the creation and dissemination of digital fashion content, focusing on the intangible cultural heritage of western Beijing, particularly Jingxi shadow puppetry. The purpose of the paper is to describe the case of design of an innovative textile tapestry with augmented reality, created on the basis of the intangible cultural heritage of China.

Key words: *augmented reality, digital fashion, innovative textile, intangible cultural heritage, shadow puppetry.*

INTRODUCTION

This paper explores the various types of digital art solutions and presents a case study on the innovative utilization of AR interactive experience within a digital fashion designed to promote Jingxi shadow puppetry, an intangible cultural heritage art form. The inheritance and development of Beijing's characteristic intangible cultural heritage has a profound impact. The creation of digitally fashion products has broadened the innovative path of combining cultural research and fashion design from the communication level, and the interactive experience design has significantly improved its scalability.

PURPOSE

The emergence of digitally fashioned products has opened new avenues for integrating cultural research and fashion design at the communication level. The purpose of the paper is to describe the case of design of an innovative tapestry with augmented reality, created on the basis of the intangible cultural heritage of China - a puppet shadow theater.

RESULTS AND DISCUSSION

Typological research on Fashion design involves categorizing and analyzing different aspects of Digital art solutions based on shared characteristics or types. The main contents of such research encompass the Technological, Cultural and Societal Impact areas. A focus on specific categories within digital fashion, such as design and production, can be effectively studied using typological methods. Nobile et al. [1] illustrates this by analyzing design and production in the context of digital fashion through a typological lens.



Fashion design can be categorized based on the digital technologies employed, such as 3D modeling, virtual and augmented reality, artificial intelligence, and blockchain. Virtuality in Digital Fashion Kim & Kim [2] address the socio-cultural impact of digital revolution in fashion, including the formation of a virtual representation of fashion culture. VR technologies are increasingly being used in fashion design and consumption. Virtual try-on experiences, digital fashion assets, and immersive shopping experiences are emerging trends. And AR try-on apps, interactive marketing campaigns, or educational tools that overlay digital information onto the physical world.

Recent years have witnessed a surge in the popularity of Chinese-style clothing internationally [3]. This trend signifies a growing appreciation for Chinese design elements within the global fashion industry. Furthermore, research indicates a significant transformation within the Chinese fashion industry itself, driven by consumer demand for high-quality, healthy, sustainable, and personalized fashion experiences.

In 2011, Chinese shadow puppetry passed the UNESCO review and was selected into the "Representative List of Human Intangible Cultural Heritage". "Western Beijing Shadow Puppetry" is an important intangible cultural heritage project in Haidian District and Beijing City. Shadow puppetry, also known as "shadow play" or "lantern shadow play", is a kind of silhouette of characters made of animal skin or cardboard, which is performed with a light-proof cloth under the light. "Jingxi Shadow Puppetry", also known as "Royal Palace Shadow Puppetry", began in the Qing Dynasty and has a history of more than 100 years.

Under the scientific guidance of Wu Simiao, an innovative textile tapestry "Jingxi Lantern Shadows" was created. This tapestry is based on the excellent repertoire of the Beijing Shadow Puppet Troupe's classic excerpt "Water Over the Golden Mountain" and cleverly combines the characteristics of Beijing Shadow Puppetry to present the concise and freehand brushwork of the scenery, the vivid and legendary images, and the romantic fantasy of the movements. The story is summarized into six nodes: Xu Xian's boat ride, White Snake looking for her husband, Fahai's protection, Snake Monk's fight, Flooding the Golden Mountain, and the escape of the snake demon (fig. 1, a). The final tapestry pattern design focus on the description of these six nodes and create corresponding interactive effects for each node (fig. 1, b).

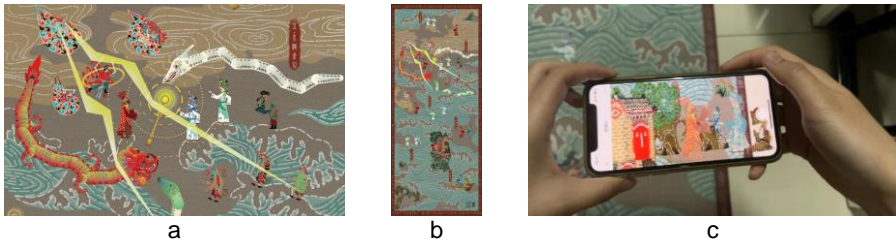


Fig. 1. Fashion Tapestry Experience Design : "Jingxi Lantern Shadows"
(China, 2023, Yi Shi, supervisor Wu Simiao)



Through dynamic reprocessing of flat characters and backgrounds, combined with the movement of shadow puppets, 10s-20s dynamic highlights of this node are displayed in each scene. Combined with the unique sound characteristics of shadow puppet dramas, the screen content in the carpet is scanned to the first time (fig. 1, c). The audience shows the dynamic effects of the play, adding fun to the interaction of fashion items.

CONCLUSIONS

The systematization of digital art solutions within the domain of fashion design can be categorized into diverse types, each leveraging distinct facets of digital technology to augment, innovate, or revolutionize the aspects of fashion design. Furthermore, research into the cultural and social impacts can delve into the examination of how each pertinent factor influences the design process, production methodologies, and consumer engagement strategies.

The digital reconstruction and enhancement of Jingxi shadow puppets signify a profound interactive approach for their promotion. Traditionally perceived as antiquated, the revitalization of Jingxi shadow puppetry has been transformed into a compelling and fashionable pursuit, thus garnering the interest of the modern youth demographic. The outcomes of this transformation are manifested through an offline real-time Augmented Reality interactive experience, coupled with the development of related fashion accessories and merchandise. This innovative approach not only revitalizes a traditional art form but also bridges the gap between historical cultural elements and contemporary fashion trends.

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ІННОВАЦІЇ В ДИЗАЙНІ ЦИФРОВОЇ МОДИ НА ОСНОВІ НЕМАТЕРІАЛЬНОЇ КУЛЬТУРНОЇ СПАДЩИНИ

У статті досліджено застосування дизайну доповненої реальності у створенні та поширенні цифрового модного контенту, зосереджуючись на нематеріальній культурній спадщині західного Пекіна, зокрема тіньовому ляльковому театрі Цзінсі. Метою статті є опис прикладу дизайну інноваційного текстильного гобелена з доповненою реальністю, створеного на основі нематеріальної культурної спадщини Китаю.

Ключові слова: доповнена реальність, цифрова мода, інноваційний текстиль, нематеріальна культурна спадщина, тіньовий ляльковий театр.