FEATURES OF CONTEMPORARY CHINESE STYLE IN DIGITAL FASHION DESIGN: CASES OF FASHION INDUSTRY PRODUCTS

The purpose. To analyze the artistic and aesthetic characteristics that influence the modern digital design of Chinese-style clothing, the practice of creation and to propose modern digital design solutions in the design of jewelry, style and clothing.

Methodology. The theoretical and practical research methods have been used: analysis of scientific and professional literature on the topic of research, design based on the evolution of patterns and forms, analysis of analogs of design objects, design and creation of a product using specialized software.

The results. The main features of modern Chinese style in clothing design and personal image are revealed. The main characteristics of the design style solutions of modern Chinese digital clothing and personal image are summarized. According to the results of the research, projects of digital design of jewelry and personal image were developed.

Scientific novelty. The characteristics of the main forms of digital fashion design in the Chinese style are analyzed, the development trends that affect modern Chinese fashion design are revealed, and some practical results of digital fashion design are summarized.

Practical meaning. The results of the study can be used to analyze and develop industrial and consumer-oriented design of clothing, jewelry and personal image in Chinese style. The results of the study can be used to further explore digital clothing design and personal image in Chinese style for media content.

Keywords: Chinese style; fashion design; digital fashion; media content; jewelry design; image design; Chinese culture.

Introduction. The fashion industry and scientific community have taken notice of the emerging field of digital fashion, which utilizes technology to create and simulate clothing designs. This innovative approach combines traditional fashion design principles with cutting-edge technology, creating new digital materials and techniques. The development of digital fashion has been driven by rapid advancements in technology, including CAD [1], 3D printing, and virtual and augmented reality (VR and AR) [2].

Digital technology could create various effects in contemporary Chinese style digital fashion design. This allows designers to create new and innovative plans that incorporate traditional Chinese elements in a modern way. The use of augmented reality and virtual reality to create more immersive and interactive experiences. This could allow consumers to try different digital fashion designs without leaving their homes. Artificial intelligence (AI) is used to create more personalized and customized designs. This could allow consumers to make digital fashion designs tailored to their preferences. The use of blockchain technology to create a more secure and transparent supply chain for digital fashion. This could help to ensure that consumers are getting authentic and ethical products.

Digital fashion design has the characteristics of reproduction, interpretation, and experience. We can further elaborate on the formation of contemporary Chinese style fashion design characteristics based on the design characteristics driven by these unique technologies.

Representation in digital fashion refers to the visual and audio presentation of fashion designs using digital tools and technologies. It includes using computer-generated graphics, 3D modelling and augmented reality to showcase fashion designs. Digital tools also allow for greater customization and personalization in fashion design, leading to a more diverse representation of fashion styles.
Contemporary Chinese style in digital fashion design is a fusion of traditional Chinese culture and modern digital technology. The application of traditional Chinese design elements and the inheritance and development of excellent Chinese culture. These elements can include motifs, patterns, colors, and symbols from Chinese history and culture. For example, a digital fashion design might feature a qipao with a dragon or phoenix motif or a jacket with a traditional Chinese floral pattern. It is of interest to study the Chinese images of totems in modern textile design by Gao and Yezhova [3].

Interpretation in digital fashion refers to the meaning and value attributed to fashion designs in the digital space. It includes the interpretation of fashion trends and styles and the interpretation of cultural and social meanings associated with fashion. Digital fashion also allows for greater inclusivity and diversity in fashion interpretation, as designers can create designs that reflect different cultural and social perspectives. With the use of algorithmic design and computational media in digital fashion, designers can introduce innovative and unique design elements into traditional patterns and shapes, resulting in new and exciting fashion designs that combine tradition with modern technology. Digital brand marketing and promotion, emerging fashion communication channels and forms, such as short video delivery platforms, virtual anchors and spokespersons, all impact China’s fashion industry and new future stylized design trends.

Digital fashion experience refers to the interaction between consumers and digital fashion. Digital fashion offers new opportunities for consumers to experience style in new ways, including through virtual try-ons, virtual fashion shows, and augmented reality experiences. Personalizing designs allows consumers to customize digital fashion designs to their preferences using IP elements. IP elements, such as characters from popular movies or TV shows, can be used to create digital fashion designs that are more appealing to younger consumers. The use of NFTs (non-fungible tokens) to create digital fashion designs that are unique and collectible. This could open new possibilities for digital fashion designers to sell and distribute their work. They are creating interactive experiences. This allows consumers to interact with digital fashion designs in a more immersive way.

In recent years, there has been a growing interest in contemporary Chinese style in digital fashion design. This is due to a number of factors, including the increasing prominence of Chinese culture on the global stage, the growing number of Chinese consumers, and the development of new technologies that allow designers to create more realistic and immersive digital fashion experiences. With the advancement of technology, we can expect to see more innovative and creative ways of using digital fashion to express our identity and connect with others. Designers can blend traditional Chinese culture with modern fashion, and consumers can express their Chinese identity through fashion. Digital fashion design stands apart from traditional fashion design because it is more interactive and personalized. Consumers can immerse themselves in digital fashion designs and customize them to suit their personal preferences.

Analysis of previous researches. The topic of contemporary Chinese style in fashion design is considered in various books, articles and publications have explored chinoiserie design in fashion design. Research and discussion have been carried out on many aspects such as design thinking, shape and function, culture, society and consumption. There are relatively few articles about the reasons for the formation of contemporary Chinese style in digital fashion design, contemporary applications, and future design trends.

In the dissertation Elise Dee Co [4], it argues that fashion exists as a way for people to express themselves to others, to reflect portions of their personality in their outward appearance, and to distinguish themselves as individuals. Fashion design, electronic design and computer
programming are mature fields in their own right, making it difficult to develop a design approach that combines the three. The goal of her research is to create new computationally-based examples of clothing that provide expressions that are not possible with traditional clothing technology, and through her research show how technology can enhance these expressions of what we wear.

In the article Wenen Xu [5], fashion and clothing are considered primarily a multisemiotic discourse, which creates meaning through various semiotic modes or resources. And the evidence validates that clothing serves as a form of fashion in which they use an assortment of semiotic resources for synergistic communication during design processes. In addition, analysis of the data reveals a close relationship between meaning and its accompanying social context.

In the article by Yuru Ma and Xiangyang Bian [6], stated that Chinese themes and styles have a rich history internationally. Both Chinese and Western designers incorporate them, but there are differences in interpretation. Contemporary Chinese theme fashion can be viewed as modern and exotic in the West, while in China, it represents a retro theme. A wide range of elements should be used to achieve balance in design, and a balance between conservative and avant-garde features should be struck.

In the book [7], Professor Wu Haiyan believes that the construction of Chinese style fashion design includes not only Chinese style drawing, creation, and modelling, but also the potential for imaginative innovation considering the relationship between group and science, pattern and life. It is a gradually constructed open, cross-border, and system-wide discipline. The development of Chinese style fashion is correlated with the development of science and technology, lifestyle, and Chinese style design.

The article [8], edited by Abu Sadat Muhammad Sayem, analyzes Digitalisation is visibly present in different aspects of fashion design, manufacture, business, and product features. It is easy to perceive it through the use of digital technologies available for application in the fashion industry. The technological innovations that are making digital fashion possible can be clustered under the four following themes: (1) digital design and e-prototyping, (2) digital business and promotion, (3) digital human and metaverse, and (4) digital apparel and smart wearable technology.

Chinese fashion has inspired the Western world throughout history, especially in the silk trade with the Roman Empire. Chinese motifs and clothing from the imperial era have influenced Western designers, leading to innovative fashion designs [9]. In the article by DeLong, Wu, and Bao, conducted a study on the role of aesthetic characteristics in fashion design. Previous research on Chinese fashion has only explored one aspect related to aesthetic elements or values [10].

In the article by Rolling and Teel [11], the authors expand our understanding of how people appreciate electronic clothing. Interview data showed that participants viewed apparel without electronics as fashion, with digital music as art, and with colored lights as costumes. Based on these findings, this research recommends that designers in various fields, such as apparel, art, performing arts, cosplay, and more, carefully consider the results they wish to achieve when incorporating sensory cues into clothing. At the same time, the issue of contemporary Chinese style art and aesthetic characteristics, the development of digital fashion technology, and consumer experience and fashion communication also need further research.

Chinese fashion designers interpret their own culture through retro themes, while foreigners see it as an artistic recreation of other traditions. To balance conservative and avant-garde styles, designers must improve their skills and explore Chinese materials. They should also balance Chinese civilization and international fashion aesthetics to establish core values in contemporary Chinese fashion.
Statement of the problem. Analyzing the characteristics of the contemporary Chinese style in digital clothing design, we can study the modern trend formed from the perspectives of media, technology, and consumer experience and compare it with traditional Chinese clothing design. This article aims to analyze the artistic aesthetic characteristics that influence contemporary Chinese style digital fashion design, practice creation and suggest modern digital design solutions in the design of jewelry, style, and clothing.

Results of the research and its discussion. China has a wealthy traditional cultural heritage; many shapes, stories, and other elements can be used in art design creation. In contemporary Chinese style design, it can be converted into four categories for design application: form elements, content elements, media elements, and market elements.

The world-famous three-story blue tile-roofed cylindrical building in the Temple of Heaven in China implies the cosmology of traditional Chinese philosophy. The classical gold wire winding represents the glazed tiles and architectural columns on the Temple of Heaven, which means "the unity of man and nature." Pear-cut gemstones dangle from the base, adding a touch of movement to the majestic look. Through the resetting of the shape and implication of graphic elements, the designer animated the characteristic elements such as lines, light and shadow, and neatness of the Hall of Prayer for Good Harvests, abstractly reflected the outline of the Hall of Prayer for Harvests and the classical decoration inside, and innovatively designed a new Chinese style of "traditional + modern" style. The designer uses the software Rhino7 to model three sets of earrings in different shapes, and then uses the software critical shot to render and color them. They have finally completed three sets of design drawings and physical production of the Temple of Heaven earrings with different themes. Fig. 1 and Fig. 2 show the design project of a digital fashion jewelry made by the student of the bachelor’s Digital Media Art at Beijing Technology and Business University Rongjie Wang, scientific supervisor of the project is Simiao Wu.

To the graphic design and the final physical display, new ideas have also been explored in the new media fashion. This design project also surveyed people under 35 in 2022. Among the 300 questionnaires returned, the survey results show that nearly 84% of people know or have heard of the new Chinese style, and 92% of people can accept this culture and are willing to try it. According to the questionnaire survey, nearly 92.31% of people think design works should include displaying model try-on renderings and videos.

Aurora powder is used in the actual production of the nail piece decoration design, which can refract blue and purple changes at different angles to reflect the sense of flow; in addition, the algae well in the Temple of Heaven, as the brightest starry sky in ancient buildings, is also decorated with stars and moon elements as a whole; pearl fan-shaped elements and flow The changing earrings echo each other. Therefore, during the creation, the elements of the stars and the moon were also selected as embellishments to emphatically express the part that portrays the sky, showing the universe where the stars flow, as if giving a response to the dialogue in the Hall of Prayer for Good Harvests. Fig. 3 shows the design project of a digital fashion jewelry made by the student of the bachelor’s Digital Media Art at Beijing Technology and Business University Rongjie Wang, scientific supervisor of the project is Simiao Wu.

The motion pictures are far more impactful than the simple photo of the real thing, and the level of planting is deep. Using novel and vivid visual presentation methods such as fashion blockbusters and images is more in line with the public’s aesthetic consciousness, and it is easier to narrow the distance between Chinese traditional culture and the public. Finally, export the video by rotating and zooming in. These video clips will be added to the finished film to enhance the sense of interaction between reality and virtual reality.
In addition, Chinese traditional clothing showcases distinctive patterns and colors that convey artistic and symbolic meanings. The dragon inscriptions symbolize royalty, while floral designs represent nobility and purity. Auspicious clouds, goldfish, and tuanlong patterns signify good luck and happiness. The five colors of red, yellow, blue, white, and black hold emotional significance based on the five elements theory. "Qingjie" by Yu Qianzi is a typical Chinese style virtual fashion design that innovatively blends traditional Chinese blue and
white elements with Western culture, surpassing its predecessor "Blue and White" series (Fig. 4).

Chinese traditional culture classic story IP, or intellectual property, refers to the characters, stories, and other elements from Chinese traditional culture that can be used in commercial products. IP-driven fashion design can include anything from clothing and accessories to toys and games. Chinese traditional culture classic story IP in commercial products has become increasingly popular in recent years. It is due to several factors, including the growing popularity of Chinese culture worldwide, the increasing demand for unique and innovative products, and the desire of businesses to connect with consumers emotionally.

Generative AI artists need to be intentional in selecting training data, crafting prompts, and using AI-generated artifacts for creative applications. Research is needed to establish meaningful human control in the context of generative AI, including intent, predictability, accountability, and expression. It's important to identify existing interactions that allow for artistic agency and introduce controls for increased transparency and responsiveness. The aesthetics and cultural norms embedded in training data may impact the diversity of artistic outputs [12].

Integrating AI and AR technology is transforming consumer shopping experiences and increasing business efficiency. Innovations such as virtual try-on features allow customers to see how clothing looks on them without physically trying it on, reducing the number of returns and increasing customer satisfaction. Currently, the market is witnessing the rise of ChatGPT and AIGC [13]. While Chinese technology companies are investing more in AI development, as seen in the launch of Baidu's Ernie Bot, media platforms in China are also exploring the AI language model. Meanwhile, the fashion industry is also embracing AI, with early adopters among fashion technology companies expecting to experience rapid growth thanks to policy support and industrial investment.

The use of AI technology has not only provided designers with new sources of inspiration but has also opened up a variety of new options. This technology has already made its way into various industries like e-commerce, live streaming, beauty, and others. The application of virtual digital humans has become increasingly valuable in both business and daily life.

Xi Jiajia is the fourth virtual human launched by Baidu Group, and also a digital human generated by artificial intelligence. Xi Jiajia describes herself as “Xi Jiajia, born in 2000, Capricorn, 168 cm tall, a technological girl from the universe”. Her name, hairstyle and makeup are all generated by AI, and she can think and create with AI, realize AI editing, AI Painting, AI composition. Xi Jiajia entered the virtual fashion field for the first time and opened the runway show, bringing new ways and opportunities to the "digital show" era in the fashion circle. With the theme of "Reimagining the Movement", Anta teamed up with Baidu's virtual idol Xi Jiajia to appear on the 2022 virtual show of SS23 China International Fashion Week (Fig 5).

Stories and content curated around digital personas are what give fashion brands real impact and have an effect on their target audience. More and more brands want to use virtual internet celebrities to achieve their marketing goals. Digital fashion design has also brought more new situations of media communication to Chinese style fashion design. The national style virtual character Ling LING, born in mid-2020, has cooperated with GUCCI Gucci Beauty, Pechoin, and other beauty brands in 2021. In 2023, Shiseido will invite four virtual digital humans to endorse the product through the official account of Xiaohongshu. Particularly Gen Z shoppers are driving this change. Fashion companies in China are also exploring new technologies such as Metaverse. This is an immersive 3D online environment where users can interact with each other through avatars. This offers opportunities for brands to increase engagement with customers in a unique way.
Fig. 4. Examples of designer's virtual fashion works "Qingjie" series, author Xizi Yu, China, 2022

Fig. 5. Virtual idol Xi Jiajia on the virtual show of SS23 China International Fashion Week, author Baidu, China, 2022

Fig. 6. Virtual Product and it's pop idol try on effect, author Shengai Miao, China, 2022

Fig. 7. Virtual fashion “Xingmeng Qinghe” from the “Deep Sea Nebula” series of AVAR virtual label, author AVAR, China, 2022
Those who work in fashion communication create and share fashion-related information across various platforms. One such platform that has gained popularity among young people for making consumption decisions is Xiaohongshu. Several reasons for its success include its willingness to share and advanced consumption awareness, which creates a unique atmosphere. Digital fashion is rapidly evolving with AR apparel try-on and wearable NFTs. R-Space is an NFT platform launched by Xiaohongshu in Nov 2021 that uses AR and 3D technology for digital collectibles trading and creative expression. Additionally, the sales scene focuses on lifestyle and is highly consumption-oriented, while the content consists mainly of pictures and text, making consumption efficient.

A virtual costume design created by Miao Shengai has become incredibly popular on Xiaohongshu. Xu Yangyuzhuo, a member of pop idol group SNH48, recently posted three digitally altered photos on the platform in which she sports Miao's designs. The outfit, which looks like something a princess would wear, features colors such as pink, white, blue, purple, and metallic red. It has thousands of comments, thanks to its smooth texture, metallic lustre, and traditional Chinese design elements like peach blossoms and dragon patterns (Fig. 6).

AVAR is a virtual label in China, which owns virtual human IP, virtual fashion brands, digital art generators and other businesses. In the October issue 2022 of "Harper's Bazaar", supermodel Zhang Lina wore the virtual fashion "Xingmeng Qinghe" from the "Deep Sea Nebula" series of AVAR virtual labels (Fig. 7).

Based on the 2022 McKinsey fashion industry report [14], China's fashion industry is constantly evolving and upgrading. All parties involved in the industry need to work together to focus on three main themes: brand upgrading, design leadership, and industrial ecological optimization. These themes will empower and promote China's fashion industry. Advanced development in the fashion industry will improve competitiveness and voice. Chinese consumers are becoming more mature and rational, with Generation Z consumers gradually becoming the main force of consumption. This presents new opportunities for brands and the fashion industry, particularly in cultural confidence, self-expression, and digital shopping methods.

Conclusions. The formation of contemporary Chinese style in digital fashion design involves a wide range of ever-changing constituent factors, leading the future development direction of Chinese fashion design. This article starts from the reproduction, interpretation, and experience characteristics of digital fashion design, and Analyzes the formation of contemporary Chinese fashion design characteristics. Combined with specific cases, it elaborates on form, content, media and market elements. New technology can enhance Contemporary Chinese style digital fashion design, market trends, consumer demand, aesthetics, and social-cultural expression. By analyzing and exploring these factors, innovative and practical creations can be developed, leading to new digital trends in the fashion industry.

By analyzing the fashion design project of the Tiantan series, we conclude that it is necessary to move away from the traditional "Chinese-style" approach and transform the Temple of Heaven into a more modern and dynamic form to capture the audience's interest in Chinese culture. The beauty of traditional art lies in its ability to showcase the Chinese people's appreciation for the past and future, their boundless creativity in daily life, and their distinctive romantic spirit.

And after analyzing the new fashion media and consumer trends, it's clear that Gen Z in China is actively participating virtually by sharing their unique styles on social media. To stay ahead in Chinese fashion design, it's essential to establish virtual brands, characters, and materials in the Metaverse. In recent years, Chinese style clothing has gained popularity internationally, with Chinese elements
becoming a prominent feature in the fashion industry. Moreover, China’s fashion industry is undergoing a significant transformation due to the increasing demand for high-quality, healthy, sustainable and personalized lifestyles from consumers.

Література:
14. McKinsey and company (2022). 由量转质：开启中国时尚产业跃迁新征程. McKinsey China New Media Design. P. 40–43. URL: https://www.mckinsey.com.cn/wp-content/uploads/2022/09/%E9%BA%A6%E8%82%AF%E9%94%A212022%E4%B8%AD%E5%9B%BD%E6%97%B6%E5%9B%9A%E4%BA%A7%E4%B8%9A%E7%9A%AE%E4%B9%A6.pdf (Last accessed: 15.08.2023).

References:


1,2У C., 1ЄЖОВА О. В.

1Київський національний університет технологій та дизайну, Київ, Україна
2Пекінський університет технологій і бізнесу, Пекін, Китай

ОСОБЛИВОСТІ СУЧАСНОГО КИТАЙСЬКОГО СТИЛЮ В ДИЗАЙНІ ЦИФРОВОЇ МОДИ: НА ПРИКЛАДАХ ВИРОБІВ ФЕШН-ІНДУСТРІЇ

Мета: проаналізувати художньо-естетичні характеристики, які впливають на сучасний цифровий дизайн одягу в китайському стилі, практику створення та запропонувати сучасні цифрові дизайнерські рішення в дизайні ювелірних виробів, стилю та одязу.

Методологія. Використані теоретичні та практичні методи дослідження: аналіз наукової та фахової літератури з теми дослідження, проектування на основі візуальних звернень і форм, аналіз аналогій об’єктів дизайну, дизайн-проєктування та створення продукту з використанням спеціалізованого програмного забезпечення.

Результати. Розкрито основні риси сучасного китайського стилю в дизайні одягу та персонального іміджу. Узагальнено основні характеристики стилювих різьень дизайн і китайського цифрового одягу і персонального іміджу. За результатами дослідження розроблено проекти цифрового дизайн ювелірних виробів та персонального іміджу.
Наукова новизна. Проаналізовано характеристики основних форм дизайну цифрової моди в китайському стилі, виявлено тенденції розвитку, які впливають на сучасний китайський дизайн виробів індустрії моди, узагальнені деякі практичні результати дизайну цифрової моди.

Практичне значення. Результати дослідження можуть бути використані для аналізу та розроблення промислового та орієнтованого на індивідуального споживача дизайн моду, ювелірних прикрас та персонального іміджу в китайському стилі. Результати дослідження можна використовувати для подальшого вивчення цифрового дизайн моду та персонального іміджу в китайському стилі для медіаконтенту.

Ключові слова: китайський стиль; дизайн одягу; цифрова мода; медіа контент; дизайн ювелірних виробів; дизайн стилю; китайська культура.

ІНФОРМАЦІЯ ПРО АВТОРІВ:

У Симяо, аспірантка, Київський національний університет технологій та дизайн, викладач, факультет цифрового медіамистецтва, Пекінський університет технологій і бізнесу, Китай, ORCID: 0009-0004-8820-9171, e-mail: wusimiao@hotmail.com

Єжова Ольга Володимирівна, д-р пед. наук, канд. техн. наук, професорка, професорка кафедри моди та стилю, Київський національний університет технологій та дизайну, ORCID: 0000-0002-5920-1611, Scopus 57200291293, e-mail: oyezhova70@gmail.com
