Trends and Preference for Visual Textures in Digital Fashion

Mingyao Jin, Sun Young Choi*

The Hong Kong Polytechnic University, School of Fashion & Textiles, Research Assistant
Konkuk University, Department of Apparel Design, Associate Professor*

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Introduction

Metaverse, a digital universe that has permeated our lives due to COVID-19, demanded digital fashion for the avatars (Zwieglinska, 2022). While meta-fashion trends in the fashion industry are irreversible (BoF, 2021), and virtual fashion for the actual self has emerged through SNS (McDowell, 2019; Särmäkari, 2021), it is under-researched what design elements in digital fashion attract viewers' eyes. This study focuses on texture digitally created for clothing through Instagram (IG), the most worldwide social media. This study examines i) the popular type of virtual fabrics and their visual texture, ii) users' preferences for digital fashion and fabric on IG, and iii) analyzes the trends of the design and fabric in digital fashion. It is worth analyzing users' preferences and the trends of digital textures appearing on IG from 2020 to 2023 because it can provide practical insight for fashion practitioners with design and marketing purposes.

Literature Review

Definition of digital fashion. The term digital fashion was initially introduced in the online fashion shopping scene (Aron, 2011), and later, it was defined as the interaction of fashion and information and communication technologies (Cantoni, 2017). The latest research determined it by six themes: design, consumer, virtual, body, print, and supply (Baek et al., 2022) and in terms of the design, it refers to virtual creation and the representation of clothing through computer technology and 3D software (Särmäkari & Vänskä, 2022).

Design of digital fashion. Unlike conventional fashion, design in digital fashion is identified by transformable styles which can be easily changed by manual alternation (Choi, 2022; Rahman & Gong, 2016) and vibrant colors or patterns with dynamic, interactive, and expressive properties. Thus it demonstrates a robust visual effect (Sun et al., 2014).

Research Method

i) Data Collection. We collected 126 posts from January 2020 to January 2023 from IG, precisely 10 from 2020, 39 from 2021, 71 from 2022, and 6 from 2023 (Fig.1). We selected posts showing the user's whole-body portrait in digital clothing, applying augmented reality (AR) technology, and gathered relevant text content, account information, comment, like,

hashtag, and link. We derived six pairs of adjectives describing texture after removing terms with similar meanings and inadequate for virtual texture in Koester (1993): W1: Rough-W2: Smooth, W3: Limp-W4: Crisp, W5: Shiny-W6: Dull, W7: Clingy-W8: Rigid, W9: Cold-W10: Warm, W11: Heavy-W12: Light.

Year/account	2021/ salavat_kypere	2022/ katya_iowa	2022/ sincerely_hank	2022/ adams_ktrn	2022/thisoutfit doesnotexist
Fabric/Texture	PVC/shiny	leather/smooth	metal/cold	mesh/light	denim/dull
Image					

Figure 1. Samples of Digital Fashion on IG

ii) Visual Texture Evaluation. Two experts examined the visual texture of 126 image samples through descriptive adjectives between 15 Feb 2023 to 25 Feb 2023. While analyzing the images, we separately marked the fabric and texture of each piece of clothing in one outfit depending on whether only virtual clothing was used or mixed with actual ones.

iii) Data Analysis. For analyzing the evaluation result, we counted and compared each texture keyword's yearly and total frequency of occurrence with SPSS 26 and Excel. As to the textual data analysis, we manually extracted the emotional words from the comment to learn the users' attitudes towards digital fashion.

Results & Discussion

The popular type of virtual texture. The wearers of digital fashion on IG tried more than two textures by adopting virtual garments on physical clothing through AR. The most common virtual fabrics were metal, polyester, and PVC, while fabrics for actual garments are knit, cotton, and leather. In virtual texture, shiny (36%), smooth (16%), cold (16%), and light (11%) were the most favored, followed by dull (6%), rigid (5%), limp (4%), warm (3%), heavy (2%), and clingy (1%). It may be because the latter textures, more often shown in the actual fabric, were not prominent as the former, so it did not satisfy the users' needs to attract followers' attention with cutting-edge styles. Moreover, users' preference for surreal textures implied their motivation to escape from real life. Dull and clingy were popular in the actual garment section, as these pieces often played the supplemental role, worn beneath to contrast or emphasize the virtual outer garments.

Users' preferences for digital fashion. The most liked digital designs were unrealistic and exaggerated styles with eye-catching effects. These virtual garments employed unconventional

materials, such as balloons, metal, glass, and plastics, as well as attractive colors like gold, silver, and even laser colors. Notably, the preferred textures were often noticeable (e.g., shiny), imaginary (e.g., smooth and light), and futuristic (e.g., cold). Besides, in many of them, the actual garments had a high body exposure, or some had body-fitted wear such as underwear and swimming wear, even with dramatic body postures. These preferences obviously presented users' expressive desire to show off their self-image and attract peers on social media (Fardouly & Vartanian, 2016)

The trend in digital fashion. When a few simple virtual clothes appeared on SNS in 2020, most users considered digital fashion as extraordinarily new and strange, while 30% of commenters regarded it as fake and unnecessary. Later, the negative voices (7%) decreased with enriched digital garments appearing on IG in 2021. In 2022, thanks to advanced digital technology and the creativity of designers, digital fashion on SNS was not limited to static photos but expanded to videos with movable clothing featuring more futuristic and novel. Overall, positive responses toward digital fashion have become dominant in recent years.

Conclusion

This study focused on fabric and the visual texture of digital fashion through data analysis and visual evaluation. The results imply that the virtual fabric users preferred the most in digital fashion are futuristic and unconventional materials, such as metal, PVC, and polyester, with shiny, smooth, cold, and light textures. Moreover, behind the preference, the user's need and motivation for digital fashion were revealed: i) showing self-image and catching others' attention, ii) being divorced from the real world. There could be further exploration regarding other factors influencing users' preference for digital fashion designs. This study contributes to academia and the fashion industry by developing a visual assessment method for analyzing virtual textures. With these research insights, designers can develop digital fashion products based on user preferences and trends. However, due to the small data size and the short duration, the research needs to be further assessed and discussed via constant observation and analysis to align with the ever-changing fashion trends.

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