

Designing the future: AI-powered TTF logo-inspired patterns for apparel and accessories

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Artificial intelligence is increasingly transforming digital apparel and accessory design by enhancing creative methodologies in fashion. This article explores AI's potential in generating textile print patterns, inspired by the logo of the University of Zagreb Faculty of Textile Technology. Using generative design methods, AI models create unique patterns derived from the logo's design elements. A structured approach integrates design inspiration, computer modeling, and iterative creativity. Descriptive instructions, capturing key visual and conceptual aspects, guide AI in generating patterns for digital apparel and accessories. The generated textile patterns and textures were then utilized in the traditional digital design process for apparel and fashion accessories. The created collection of models was subsequently analyzed using artificial intelligence algorithms to discern style attributes and generate novel outputs — distinct apparel and accessory designs enhanced through iterative procedures customized to user preferences. The AI-generated variations of apparel and accessory models were assessed regarding quality, suitability for textile printing, scalability, repeatability, aesthetic appeal, and utility.

Keywords: clothing and accessory design; artificial intelligence; TTF logo; pattern generation

Izvorni znanstveni rad**

Dizajn budućnosti: uzorci za odjeću i modne dodatke inspirirani logotipom TTF-a, generirani pomoću umjetne inteligencije

Umjetna inteligencija sve više transformira digitalni dizajn odjeće i modnih dodataka unaprjeđujući kreativne metode rada u modi. Ovaj rad istražuje potencijal umjetne inteligencije u generiranju tekstilnih uzoraka nadahnutih logotipom Sveučilišta u Zagrebu Tekstilno-tehnološkog fakulteta. Primjenom generativnih metoda dizajna, modeli UI stvaraju jedinstvene uzorke izvedene iz elemenata dizajna logotipa. Strukturirani pristup integrira dizajnersku inspiraciju, računalno modeliranje i iterativnu kreativnost. Opisne upute, koje bilježe ključne vizualne i konceptualne aspekte, usmjeravaju UI u generiranju uzoraka za digitalnu odjeću i modne dodatke. Generirani tekstilni uzorci i teksture, zatim su korišteni u tradicionalnom digitalnom dizajnu odjeće i modnih dodataka. Kreirana kolekcija modela potom je analizirana pomoću algoritama umjetne inteligencije, kako bi se identificirala stilska obilježja i generirali novi izlazni modeli — jedinstveni dizajni odjeće i modnih dodataka, poboljšani iterativnim postupcima prilagođenim preferencijama korisnika. Pomoću UI generirane varijacije modela odjeće i dodataka ocijenjene su prema kvaliteti, prikladnosti za tekstilni tisak, skalabilnosti, ponovljivosti, estetskoj privlačnosti i korisnosti.

Ključne riječi: dizajn odjeće i modnih dodataka; umjetna inteligencija; logotip TTF-a; generiranje uzoraka

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1. Introduction

The significance of artificial intelligence (AI) is rapidly escalating across nearly all domains of human labor and activity [1,2]. In textile and clothing design, it has profoundly transformed the methodologies for creating textile patterns and garments in recent years, equipping designers with innovative tools that enhance creativity, facilitate the exploration of unprecedented digital design possibilities, and markedly improve efficiency regarding the volume and diversity of designed patterns and models [3-5]. By employing machine learning algorithms, AI facilitates the creation of intricate patterns, the analysis of trends, and the customization of designs to meet the requirements of individuals or markets [6,7]. Artificial intelligence (AI) is profoundly altering the work of the fashion designer, revolutionizing conventional processes and creating new opportunities for innovation, enhancing creativity, efficiency, and the production of personalized digital and physical fashion items [8-10]. Deep learning-based machine learning models, such as Generative Adversarial Networks (GANs) [11], may generate distinctive patterns that amalgamate many styles, hues, and textures at an unparalleled speed compared to conventional methods. Thus, designers can innovate throughout the creation of new patterns, broadening the scope of their concepts [12,13].

Moreover, AI is employed to forecast fashion trends by analyzing extensive datasets from social networks, web search outcomes, and sales information from online fashion retail platforms. This allows designers and fashion firms to more effectively address consumer desires and requirements, thereby producing collections that align with fashion trends and market demands, specifically those of individuals [14,15].

This approach can enhance the sustainability of the fashion industry by aligning the design, development, and production of fashion products with actual market demands, thereby significantly decreasing material consumption, energy usage, greenhouse gas emissions during transport, and overall costs. The integration of AI with digital technology is creating new opportunities for design and production, enabling companies to develop unique products [15,16]. Nonetheless, altering the job of a designer also presents obstacles. Artificial intelligence necessitates the acquisition of new competencies, encompassing knowledge of algorithms, data analytics, and software applications. Designers must embrace a hybrid job that integrates artistic and specialized digital competencies [17-20].

The authors investigated the potential of utilizing the University of Zagreb Faculty of Textile Technology

(TTF) logo as a source of inspiration for generating intricate and visually appealing patterns through artificial intelligence, which could be applied to textiles in clothing design. The Faculty's logo embodies its visual identity through symbolism, color, and design, representing the institution's core beliefs, traditions, and mission. The logo serves as a visual emblem of recognition, essential for advertising the Faculty, distinguishing it in the public sphere, attracting prospective students and partners, and establishing a robust and professional image within the academic and broader community. The logo may serve as the foundation for designing numerous products intended for promotional and recognition purposes for the Faculty. It is essential to analyze the logo to identify its constituent features, which can inform the design of many promotional products.

The research outlined in the paper focuses on creating distinctive pattern motifs that can be linked to a logo through color, style, structure, and symbolism. These motifs are utilized in the design of youthful apparel and bags as fashion accessories, with the potential for further development of a promotional fashion product collection for the University of Zagreb Faculty of Textile Technology. A methodology that employs AI generative tools to convert logos into distinctive textile patterns has been established. In the methodical, iterative management of the sample generation process, it was essential to create prompts that translated the visual aspects of the brand into distinctive picture patterns, appropriate for digital textile printing, through numerous iterative operations.

2. Methodology

2.1. TTF logo analysis

The examination of the TTF logo depicted in Fig.1 commenced with the identification of discernible features, encompassing the shape and composition, colors, style and structure, as well as symbolism. The text consists of stylized TTF letters. The first letter "T" is made up of 8 vertical red lines. The second letter "T" partially overlaps the first one and consists of 13 vertical red lines and 16 horizontal gray lines.

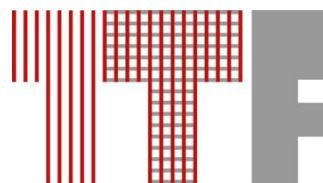


Fig.1 Logo of the University of Zagreb Faculty of Textile Technology

The system of vertical and horizontal lines forms a square grid structure symbolizing plain weave. The letter "F" is fully filled and is gray in color, symbolizing textile dyeing [21]. The letter T is predominantly red, whereas the gray hue of the letter F enhances contrast, providing a balanced and sturdy foundation. An analysis of the logo's structure reveals the presence of vertical and horizontal lines that constitute the primary visual motif. The design is minimalist and is based on a geometric framework devoid of extraneous ornamentation. The red hue contrasts sharply with the white background, whilst the gray provides a soothing juxtaposition. The fundamental components offer extensive opportunities for reimagining textile patterns and fashion accessories.

2.2. Generating textile patterns using artificial intelligence

The generation of textile designs by artificial intelligence exemplifies a complex convergence of computational creativity and design innovation. This technology is fundamentally based on a generative approach that converts visual source material, specifically the TTF logo, into intricate, versatile textile patterns. The process usually commences with a deep learning model, particularly a generative adversarial network (GAN) or an advanced transformer architecture, trained on comprehensive datasets of graphic design and textile pattern variants. The AI system use techniques like style transfer and pattern decomposition to examine the core geometric and chromatic attributes of the original logo, deconstructing its essential structural components. These pieces are subsequently algorithmically reinterpreted and recombined, producing innovative design iterations that preserve a nuanced yet identifiable link to the original inspiration. The procedure encompasses several refining phases in which machine learning algorithms produce several pattern iterations, which are then assessed against established aesthetic standards and design limitations pertinent to textile applications.

This project utilizes a new pattern design process that employs advanced artificial intelligence algorithms to convert the TTF logo into distinctive textile patterns,

Fig.2. The procedure began with the upload of the TTF logo into ChatGPT [22], which generated a comprehensive visual description of the logo's principal design features. The analysis results of the logo sign outlined in point 2.1 were compared with those obtained through the ChatGPT program, revealing a similarity in the findings. Utilizing this preliminary AI-generated description, specific prompts were developed for textile design development. The meticulously crafted prompts were subsequently entered into two generative AI platforms: Midjourney [19,23] and Adobe Firefly [24]. Midjourney, a text-to-image AI tool recognized for its artistic and painterly picture production abilities, employs an advanced machine learning model that analyzes verbal prompts to produce extremely detailed and stylized visual outputs. Adobe Firefly, created by Adobe within their Creative Cloud suite, has a design-centric methodology, emphasizing the generation of images that adhere closely to the standards of creative professionals and integrate effortlessly into design workflows. Each platform's unique AI model processed the descriptive prompts through its specific algorithm, yielding a varied assortment of textile pattern variations. From an extensive repository of created patterns, samples were chosen for further development, with the optimal match to the logo elements identified by an examination of the sample components

2.3. Digital design of clothes and bags as fashion accessories

Utilizing Adobe Illustrator's digital tools, students in the Textile and Fashion Design graduate program created garments and fashion bags, integrating patterns from a curated selection generated by artificial intelligence into their design concepts. The apparel models are designed to visually align with the Faculty's logo and primarily appeal to a youthful demographic. The apparel is crafted to embody functionality, casualness, and a sporty aesthetic. The straightforward blend of colors in the logo and geometric shapes is seamlessly integrated into the cut sections of sportswear. The patterns were implemented on the distinct cut sections of the clothes to attain the design's dynamism and the equilibrium

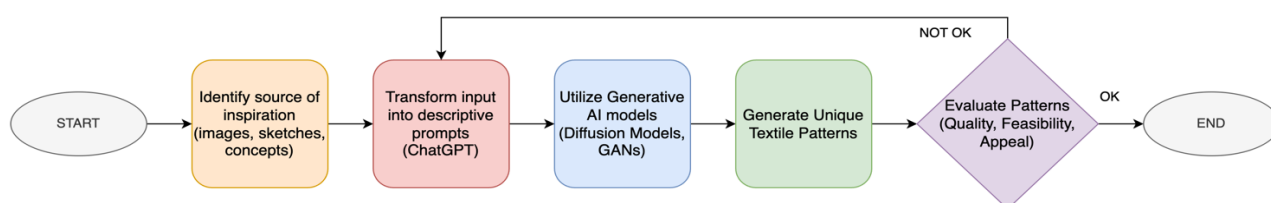


Fig.2 Pattern design methodology by using artificial intelligence based on the TTF logo

between monochromatic areas and those adorned with patterns. Furthermore, to ensure the full recognition of the Faculty, the logo was attached to the apparel in its original shape.

2.4. Generating variations of clothing and bag models using artificial intelligence

The created models of women's and men's apparel were subsequently employed to investigate the potential for creating variations of clothing designs that align with the authors' original models and incorporate aspects of the TTF logo. The potential for using the methodology developed for generating textile patterns on technical drawings of individual women's and men's apparel models is illustrated in the findings. Numerous iterations produced various models of women's and men's clothes, preserving the original cut while differing in color combinations and, in some instances, line and mesh patterns. Generative picture models were developed utilizing the AI tools Midjourney, Adobe Firefly, and DALL-E, which integrate directives on colors, patterns, and styles with technical drawings to produce novel iterations.

3. Results

The findings are delineated below, in accordance with the prescribed research approach.

Fig.3 displays samples produced using artificial intelligence, following the previously outlined methodology. Upon analysis, the samples exhibiting the most significant alignment with the logo elements were identified, as well as those receiving the highest evaluations regarding aesthetic appeal and suitability for subsequent clothing and fashion accessory design. The patterns exhibit red, white, and black, aligning with the color identity of the brand. This color combination generates a dramatic visual contrast. The patterns predominantly exhibit geometric forms, including rectangles, squares, lines, and mesh structures, aligning with the logo's structural composition. The patterns abstractly interpret these aspects, broadening their application in textile design. Horizontal and vertical lines evoke the appearance of a mesh, akin to textile fibers and the structure of weaving. This association with textile technology and materials is highly meaningful. Certain designs feature layered, overlapping geometric motifs, sym-

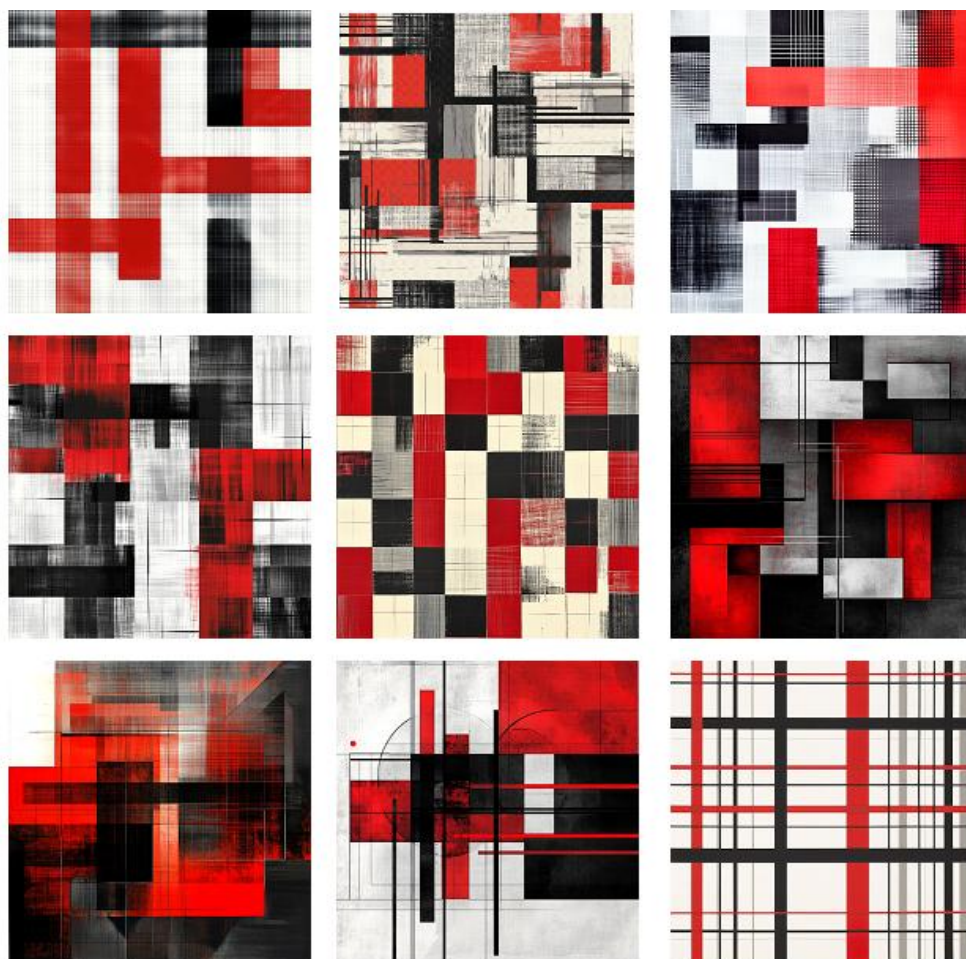


Fig.3 Textile patterns generated by using artificial intelligence based on the TTF logo

bolizing the intricacy and ingenuity inherent in the textile design process. Many of the patterns possess abstract interpretations, indicating a liberty of invention and inventiveness.

The produced patterns graphically convey the fundamental principles of the brand using the medium of textile design. The application of AI to reinterpret logos has facilitated the imaginative conversion of logo components into functional and modern textile designs. The scalability of the patterns facilitates their additional use in 2D/3D design and the production of fashion products, as well as in digital textile printing. The examination of the clothing models for women and men depicted in Fig.4 reveals a contemporary, minimalist design that integrates utility with the visual identity of the University of Zagreb Faculty of Textile Technology. The design incorporates the characteristic hues of red, white, and black, aligning with those portrayed in the TTF logo. The pattern applied to the smaller sections of the cutting surfaces is visually predominant compared to the monochromatic, much grayer areas that enhance the overall balance. The upper section of the female garment features a high collar and linear embellishments that accentuate its structure and contemporary aesthetics.

The skirt featuring an asymmetrical flap enhances the design's dynamism and introduces a contemporary aspect that embodies adaptability and innovation in design. The cuts are uncomplicated yet meticulously designed to ensure comfort and functionality, aligning with the practical requirements of the youthful demographic. The TTF logo is subtly included into the model's design, ensuring full recognition and association with the Faculty's identity. Their position and dimensions gently underscore the significance of the Faculty while maintaining the integrity of the overall design. The utilization of repeated geometric shapes, rectangular lines, and grids is linked not only to the logo but also to the concept of modularity and the integration of technology, creativity and education, which constitute the fundamental pursuits of the Faculty. The garment design represents the synergy between tradition and modernity, a principle that is also vital for the Faculty, which as an institution reconciles academic quality with the integration of current technologies. This model's design effectively conveys the values of the University of Zagreb Faculty of Textile Technology through a blend of aesthetic simplicity, usefulness, and technological perfection.

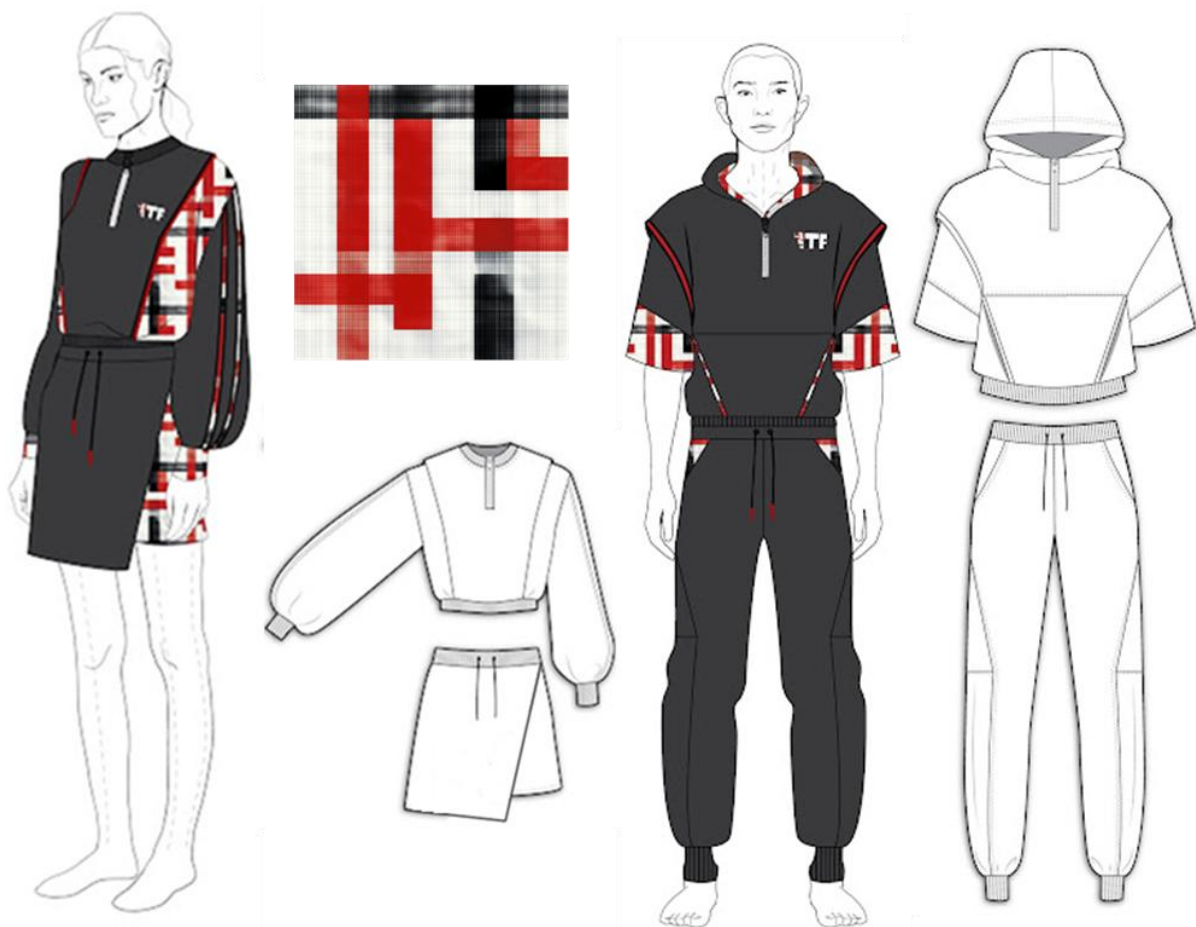


Fig.4 Designed models of women's and men's clothing inspired by the TTF logo and with an applied pattern generated by artificial intelligence

Color elements, patterns, and logos construct a visual narrative that embodies the technical and creative contributions of the Faculty within the textile and fashion sectors.

An analysis of the menswear model depicted in Fig.4 revealed a stylistic alignment with the women's clothes model, as both exhibit identical patterns and colors. The contemporary design approach is evident in the models' shapes and lines, while the informal and sporty aesthetic conveys a youthful dress style and the practicality of the model in everyday settings. This model subtly integrates the Faculty's logo, akin to the female model, so establishing a complete connection with the Faculty's visual identity.

The presented clothing designs illustrate the transformation of academic identity into functional fashion items, which may integrate into the visual identity of the Faculty. The model's design effectively integrates aesthetic and functional elements influenced by the Faculty of Textile Technology's logo. The logo's distinctive features (colors, geometry, symbolism) were adapted to the modern concept of women's and men's apparel, highlighting the significance of creatively reinterpreting tradition with advanced textile technologies.

The selection of colors, horizontal and vertical lines in the cut, and abstract patterns derived from a palette developed by artificial intelligence establish a robust connection with the elements of the brand. The connection with the faculty's logo is mirrored in the upper section of the first model, which resembles the letter T, repeated twice in the logo design. The amalgamation of predominant red, neutral gray, and a balanced pattern on the upper and bottom sections of the model enhances the design's dynamism and appeal, while the elegantly crafted models featuring a contemporary casual cut augment functionality and practicality. The logo integrated into the design of these models ensures full recognition and affiliation with the Faculty, while the models has the ability to enhance the Faculty's visual identity in a unique and aesthetically pleasing manner.

Alongside garment models, aspects of the logo were implemented into the design of women's bags as fashion accessories, with Fig. 6 illustrating two versions that can be linked to the Faculty's logo. The selection of colors, horizontal and vertical lines, and an additional pattern from the produced palette establish a robust connection with the brand. The motif of the pattern is based on the translation of the logo into an abstract composition, referencing techno-

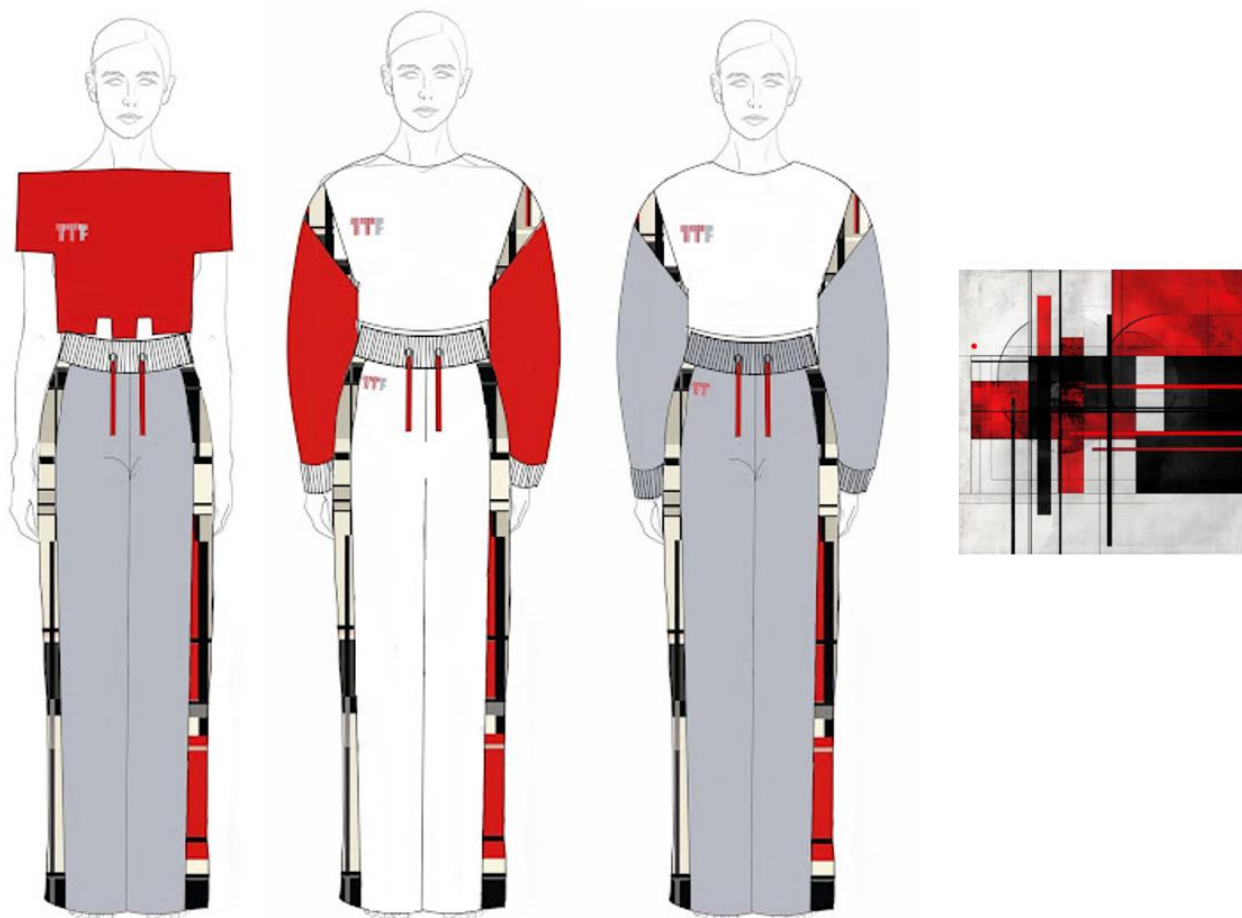


Fig.5 Designed women's clothing models inspired by the TTF logo and with an AI-generated pattern applied

logical perfection and textile structure. The first bag model integrates Faculty logo into the design, while on the second model, the partially altered letters T and F are embedded within the cut sections of the bag's front, resulting in a highly appealing, innovative, and contemporary design. The contrasting white seams against the gray backdrop accentuate the letterforms, while the red line on the flap enhances the design's dynamism and establishes a balance between the gray and patterned elements. The model's design embodies a fusion of modernity and functionality, with the option to create the showcased variants using a blend of leather and textile materials featuring an applied pattern, highlighting the interplay between functionality and aesthetics.



Fig.6 Designed models of women's bags inspired by the TTF logo and with an applied pattern generated by artificial intelligence

Fig.7 and 8 illustrate the outcomes of creating variations of women's and men's clothing models through artificial intelligence tools, utilizing technical drawings crafted by the author and numerous iterations



Fig.7 Variations of women's clothing models generated by the application of artificial intelligence, based on the models designed by the authors and the TTF logo

in which all requisite parameters are established, to produce design proposals that can be associated with the elements of the logo sign. The links on the created models are discernible through the choices of colors, lines, and mesh structures on each model that relate to the logo features. The capacity to replicate previously created pattern motifs on generated clothing models remains unfeasible using this methodology and the current capabilities of AI programs for model generation.

By refining the parameters that link the stylistic variations of the women's clothing models depicted in Fig.7, a collection of garments was produced. These items, while distinct, maintain a stylistic connection to the author's original design, utilizing the same technical drawing but manifesting in various sporty-casual silhouettes. The connection with the Faculty's logo is preserved through the use of color, lines, mesh patterns, and contemporary design, suitable for the younger demographic. The apparel collection depicted in Fig.9 presents opportunities for the advancement of both digital and physical garments as components of the visual identity of the Faculty of Textile Technology, allowing for the creation of a model tailored to the diverse preferences of female students, in alignment with contemporary trends in fashion design within the framework of Mass Customization.

Fig.10 displays a collection of women's bag models, produced using artificial intelligence technologies, inspired by the designs created by the authors and the TTF logo.

A portion of the women's bag model was created using technical drawings and defined parameters that guide the design towards the incorporation of logo elements, while another portion was developed without technical drawings, yet still adhered to parameters aligned with the logo design.



Fig.8 Variations of men's and women's model generated by the application of artificial intelligence, based on the designed model by the author and the TTF logo



Fig.9 A collection of women's clothing generated using artificial intelligence tools, stylistically linked to the model designed by the author and the TTF logo



Fig.10 Models of women's bags generated using artificial intelligence, based on models designed by the authors and the TTF logo

4. Conclusion

The research in the paper revealed the potential of multi-platform AI generation to create design iterations that retain a conceptual relationship to the original logo while exploring creative alterations. The methodology emphasizes the synergistic relationship between human creative direction and the generative abilities of artificial intelligence, illustrating how strategic prompt engineering may drive AI tools to generate contextually pertinent and visually appealing textile design concepts. This technology accelerates the creative process and allows designers to investigate design ideas that may be difficult to envision with conventional manual techniques, ultimately connecting computational intelligence with artistic expression.

The authors' designed clothing and bag models, inspired by the logo of the University of Zagreb

Faculty of Textile Technology, effectively integrated elements of the logo with abstract motifs generated through artificial intelligence tools, also influenced by the logo. The continued evolution of model variations utilizing artificial intelligence tools has created numerous opportunities, such as the design of a clothing and bag collection, serving as a foundation for the development of both digital and physical promotional products for the Faculty aimed at the student demographic and promotional events.

References:

- [1] Sreenivasan, A.; Suresh, M. Design Thinking and Artificial Intelligence: A Systematic Literature Review Exploring Synergies. *International Journal of Innovation Studies* 2024, 8, 297-312, <https://doi.org/10.1016/j.ijis.2024.05.001>.

- [2] Zhang, Z.; Yin, H. Research on Design Forms Based on Artificial Intelligence Collaboration Model. *Cogent Engineering* 2024, 11, 2364051, <https://doi.org/10.1080/23311916.2024.2364051>.
- [3] Lampe, A.; Stopar, J.; Jain, D.K.; Omachi, S.; Peer, P.; Struc, V. DiCTI: Diffusion-based Clothing Designer via Text-guided Input. In *Proceedings of the 2024 IEEE 18th International Conference on Automatic Face and Gesture Recognition, FG 2024, Istanbul, Turkey, 27-31 May 2024*; Institute of Electrical and Electronics Engineers Inc.: New York/New Jersey, USA, 2024; pp. 1-9, ISBN 979-8-3503-9494-8, <https://doi.org/10.1109/FG59268.2024.10582026>.
- [4] An, H.; Park, M. An AI-based Clothing Design Process Applied to an Industry-university Fashion Design Class. *Journal of the Korean Society of Clothing and Textiles* 2023, 47, 666-683, <https://doi.org/10.5850/JKSCT.2023.47.4.666>.
- [5] Deng, M.; Liu, Y.; Chen, L. AI-driven Innovation in ethnic Clothing Design: An Intersection of Machine Learning and Cultural Heritage. *Electronic Research Archive* 2023, 31, 5793-5814, <https://doi.org/10.3934/era.2023295>.
- [6] Guo, Z.; Zhu, Z.; Li, Y.; Cao, S.; Chen, H.; Wang, G. AI Assisted Fashion Design: A Review. *IEEE Access* 2023, 11, 88403-88415, <https://doi.org/10.1109/ACCESS.2023.3306235>.
- [7] Zhang, Y.; Liu, C. Unlocking the Potential of Artificial Intelligence in Fashion Design and E-Commerce Applications: The Case of Midjourney. *J Theor Appl Electron Commer Res* 2024, 19, 654-670, <https://doi.org/10.3390/jtaer19010035>.
- [8] Dhiwar, K. Artificial Intelligence and Machine Learning in Fashion: Reshaping Design, Production, Consumer Experience and Sustainability. In *Proceedings of 2024 ASU International Conference in Emerging Technologies for Sustainability and Intelligent Systems (ICETISIS), Manama, Bahrain, 28-29 January 2024*; Applied Science University in Bahrain: Kingdom of Bahrain, 2024; pp. 1766-1775, ISBN 979-8-3503-7222-9, <https://doi.org/10.1109/ICETISIS61505.2024.10459436>.
- [9] Singh, S. Artificial Intelligence in the Fashion and Apparel Industry. *Tekstilec* 2024, 67, 225-240, <https://doi.org/10.14502/tekstilec.67.2024001>.
- [10] Jin, Y.; Yoon, J.; Self, J.; Lee, K. Understanding Fashion Designers' Behavior Using Generative AI for Early-Stage Concept Ideation and Revision. *Archives of Design Research* 2024, 37, 25-45, <http://dx.doi.org/10.15187/adr.2024.07.37.3.25>.
- [11] Yan, H.; Zhang, H.; Liu, L.; Zhou, D.; Xu, X.; Zhang, Z.; Yan, S. Toward Intelligent Design: An AI-Based Fashion Designer Using Generative Adversarial Networks Aided by Sketch and Rendering Generators. *IEEE T Multimedia* 2023, 25, 2323-2338, <https://doi.org/10.1109/TMM.2022.3146010>.
- [12] Choi, W.; Jang, S.; Kim, H.Y.; Lee, Y.; Lee, S.; Lee, H.; Park, S. Developing an AI-based Automated Fashion Design System: Reflecting the Work Process of Fashion Designers. *Fash Text* 2023, 10, 39, <https://doi.org/10.1186/s40691-023-00360-w>.
- [13] Sabbahi, B. Using Artificial Intelligence Techniques to Innovation 3D Designs for Occasion Clothes Inspired by the Fatimid Era. *American Journal of Art and Design* 2025, 10, 11-27, <https://doi.org/10.11648/j.ajad.20251001.12>.
- [14] Lee, G.; Kim, H.Y. Human vs. AI: The Battle for Authenticity in Fashion Design and Consumer Response. *Journal of Retailing and Consumer services* 2024, 77, 103690, <https://doi.org/10.1016/j.jretconser.2023.103690>.
- [15] Albishri, A.A.; Almisbahi, R.M. The Role of Artificial Intelligence in Fashion Design. *Advances in Social Sciences Research Journal* 2024, 11, 410-427, <https://doi.org/10.14738/assrj.118.17514>.
- [16] Lomov, I.; Makarov, I. Generative Models for Fashion Industry using Deep Neural Networks. In *Proceedings of 2nd International Conference on Computer Applications & Information Security (ICCAIS), Riyadh, Saudi Arabia, 1-3 May 2019*; Institute of Electrical and Electronics Engineers, 2019; pp. 1-6, ISBN 978-1-7281-0108-8, <https://doi.org/10.1109/CAIS.2019.8769486>.
- [17] Franzo, P.; Quartu, A.; Cianfanelli, E. Co-designing Fashion with AI in the Phygital Scenario. *Convergences* 2024, 17, 34, <https://doi.org/10.53681/c1514225187514391s.34.269>.
- [18] Lee, Y.K. How Complex Systems Get Engaged in Fashion Design Creation: Using Artificial Intelligence. *Think Skills Creat* 2022, 46, 101137, <https://doi.org/10.1016/j.tsc.2022.101137>.

- [19] Pan, S.; Ma, Y.; Chen, Z. A Study of Midjourney-based Artificial Intelligence in Clothing Design Innovation. In *Advances in Economics, Business and Management Research, Proceedings of the 9th International Conference on Social Sciences and Economic Development (ICSSSED 2024)*, Beijing, China, 22-24 March 2024; Atlantis Press: China, 2024; 289, ISBN 978-94-6463-459-4, https://doi.org/10.2991/978-94-6463-459-4_78.
- [20] Lee, S.; Law, M.; Hoffman, G. When and How to Use AI in the Design Process? Implications for Human-AI Design Collaboration. *Int J Hum-Comput Int* 2025, 41, 1569-1584, <https://doi.org/10.1080/10447318.2024.2353451>.
- [21] Statut Sveučilišta u Zagrebu Tekstilno-tehnološkog fakulteta. Available online: <https://api.ttf.hr/documents/xh6V2cKgMtMcoJyNaoPndNR3tJ5wT4YrlrGBDElh10DyqhpYkxdIzHul2MU0/statut-ttf-a.pdf> (accessed on 15/12/2024).
- [22] ChatGPT. Available online: <https://www.openai.com/chatgpt> (accessed on 09/12/2024).
- [23] MidJourney. Available online: <https://www.midjourney.com> (accessed on 09/12/2024).
- [24] Adobe Firefly. Available online: <https://www.adobe.com/sensei/generative-ai/firefly.html> (accessed on 09/12/2024).