

Challenges of Utilizing Artificial Intelligence Applications and Software in Fashion Design and their Impact on the Profession's Future

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Abstract:

The fashion design sector is being revolutionized by the use of artificial intelligence (AI) technologies, which have proven to be wonderful triggers for creativity, accelerating design times, and facilitating real-simulation visualizations of final products. This research aims to examine the most significant challenges and obstacles that the introduction of AI applications and programs in the fashion industry may pose, and to evaluate their likely consequences on designers' competencies and professional positions in the future. Two fundamental questions will guide the research: to understand the nature of these challenges and to investigate the impact of AI technologies on the creative and professional functions of fashion designers. The results reveal that AI presents a promising potential for enhancing designer competence and its growth, along with an increase in creative potential. It achieves this while enhancing the design process without compromising the status of the human designer or undermining their creative identity. Moreover, the results indicate that such technologies are designed to become a requirement for designers in the near future, developing a synergistic partnership between human creativity and sophisticated technical expertise. The study recommends creating specialized fashion designer education and training programs, fostering an environment that promotes ongoing learning, and challenging institutions and companies to adopt AI applications to keep pace with advancements. Additionally, it suggests undertaking further studies on how these technologies will influence the labor market of the fashion sector.

The research problem revolves around the following questions: 1. What are the most prominent obstacles and challenges associated with the use of artificial intelligence programs and applications in the fashion industry? 2. How can artificial intelligence applications and programs affect the skills of fashion designers?

Research Objectives: 1. Identify artificial intelligence applications and programs in the fashion industry, and the extent of their impact on fashion designers. 2. Present possible solutions that help overcome the obstacles facing artificial intelligence for fashion designers.

Research Importance: 1. Highlight the role of artificial intelligence in the fashion industry. 2. Highlight the most prominent challenges facing users of artificial intelligence applications and programs.

Research Hypotheses 1. Artificial intelligence plays a significant role in enhancing the skills of fashion designers. 2. There are statistically significant differences between the opinions of experts regarding the impact of artificial intelligence programs on the future of fashion designers.

Research Limits: Temporal Limits: Academic Year 1447-2025 - Substantive Limits: The research is limited to examining the challenges of using artificial intelligence applications and programs in the fashion industry and their impact on the future of fashion designers.

Research Methodology: This research study employs a descriptive-analytical research approach to achieve its objectives. This approach allows for the analysis of the phenomenon under study as it exists in reality. This is achieved by collecting organized quantitative data from the judges using the judgment tool designed for this purpose. The primary tool in this research is a questionnaire that examines the challenges of using artificial intelligence applications and programs, as well as their impact on the future of fashion designers. The tool was developed after reviewing previous relevant literature and presented to (10) judges specializing in academic assessment tool design to ensure validity and reliability. The judges examined the relevance of each item to the dimension to which it belonged, as well as the clarity, linguistic integrity, and suitability of each item in achieving the objective for which it was designed.

Summary of Results: 1. Artificial intelligence plays an effective role in developing the skills of

distinguished fashion designers. 2. Future opportunities and trends ranked first, achieving a relative weight of 80.80%, which can be considered high. This confirms the ongoing development in the field of artificial intelligence and its impact on the future of fashion designers, as well as the creation of diverse job opportunities in this sector. 3. Professional impacts on the future of designers ranked second, achieving a relative weight of 48.40%, confirming the lack of professional impact on the future of fashion designers. 4. Technical and cognitive challenges ranked third and last, with a relative weight of 44.80%, confirming that fashion designers are constantly learning, acquiring knowledge, and working to develop themselves. 5. Continuous updates in artificial intelligence technologies do not pose a challenge in keeping pace with progress; instead, they serve to develop the designer's skills and knowledge. 6. There is no difficulty in dealing with artificial intelligence applications due to a lack of training or insufficient knowledge. 7. Smart tools in design require advanced technical skills that are readily available to all designers.

Recommendations: In light of the findings reached by the researchers, they recommend the following: 1. The need to develop educational and training programs for fashion designers. 2. Direct specialized institutions and companies to provide a supportive environment for continuing education. 3. Conduct further studies on the impact of artificial intelligence on creating job opportunities in the field of fashion design. 4. Focus on various areas of technological development and their applications that serve the field of fashion design. 5. Use artificial intelligence applications for specialized companies and factories to keep pace with developments in the field.

Paper History:

Paper received July 11, 2025, Accepted September 12, 2025, Published online November 1, 2025

Keywords:

Artificial Intelligence (AI), Design Industry, Challenges, Obstacles.

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CITATION

Elham Hassanein, Samirah AlOtaibi (2025), Challenges of Utilizing Artificial Intelligence Applications and Software in Fashion Design and their Impact on the Profession's Future, *International Design Journal*, Vol. 15 No. 6, (November 2025) pp 453-461