

Applications of Artificial intelligence in Textile Design Field

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Abstract:

AI-generated textiles herald a paradigm shift within the textile industry, opening new horizons for creativity, efficiency, and sustainability. By harnessing the power of artificial intelligence to serve the industry to meet the evolving requirements of a fast-paced and environmentally conscious market. Successful integration of AI into textiles depends on a delicate balance between technological advances and ethical considerations. By charting a guiding path for innovation and responsibility, which heralds an era in which progress and sustainability converge harmoniously. The future of AI-generated textiles is promising. With the continuous development of artificial intelligence technologies, their applications in textile design and production will become highly efficient. The symbiotic collaboration between artificial intelligence and human creativity is expected to stimulate unparalleled innovations in textile design, production efficiency and sustainability. The value of the global textile industry is expected to reach \$1.84 trillion in 2023 to \$3.77 trillion by 2033 due to the growing demand for high-quality and sustainable products. Advanced artificial intelligence (AI) technology always helps improve productivity, drive production and develop innovation in the textile industry.

Research problem: The rapid development of artificial intelligence technology and its various programs, which requires continuous monitoring by designers. Fear of using design programs that enhance artificial intelligence technology and its impact on the designer's creative ability.

Research objectives: Transforming textile design from traditional design to innovative and advanced design using artificial intelligence technology. Using design programs enhanced with artificial intelligence technology in the field of textile design to develop the textile designer's capabilities and abilities to innovate and modernize.

The importance of research: Introducing a new vision in the field of textile design using design programs enhanced with artificial intelligence technology, and integrating these programs with textile design programs to bring textile design to development, modernity and modernity.

Research methodology: Descriptive and analytical approach: studying the possibilities of artificial intelligence in the field of design in general and textile design in particular. Experimental approach: Using design programs enhanced with artificial intelligence technology to create design ideas suitable for implementation on woven fabric production machines.

Results : Through the research presented, we reached a number of results: Diversity of AI design software used in textile design. Speed and efficiency in design ideas. Using artificial intelligence programs in design gives the textile designer various ideas to achieve the best design experience. The importance of written description in determining the purpose of the design, the number of colors used, the type of units, and how they are distributed within the design space.

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