

Designing Together An Analysis of Human and Generative AI Collaboration in Fashion Illustration”

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Abstract

Imagine you can come up with fashion illustration concepts in a second with generative AI to see that the posture looks awkward, the draping of the fabric is wrong and your unique drawing style is lost. Modern generative AI is fast. It creates a huge control gap for fashion illustrators. These artists need accuracy in proportions, fabric draping and artistic identity. This paper fills the missing part with a Human-in-the-Loop Hybrid Framework. It puts the control back with the artist, not the system.

The work follows a clear path. First, it helps guide posture by using hand-made sketches and ControlNet. Next, it lets you shape the look by using custom adapters made with LoRA. Then it targets details like drapery.

With these steps, the generator that feels random can act more like a calm partner. It becomes easier to work with during co-creation..

Keywords

Fashion illustration, human ideas,
Generative AI, draping, handmade sketches,
Sustainable fashion goals, Design efficiency,

Introduction

The fashion industry is changing on daily basis due to the trends, human creativity and customer needs. Now, with the appearance of generative AI, fashion industry has received additional help from technology.

Still, these tools cannot replace what people bring. Human taste matters. So do feelings and the way a designer sees a scene. As a fashion student I wanted to learn about how generative AI could help fashion illustrators while still allowing them to keep their own creativity. Curiosity about collaboration of human creativity and generative AI in fashion illustration led to conducting research on this topic. The focus of this research is on the 50-50 collaboration between people and generative AI. This research highlights how fashion illustrators can incorporate their own ideas and drawings with generative AI to create improved fashion illustrations. The study discusses possible pitfalls associated with over-reliance on AI.

Background

The fashion world changes quickly. New trends appear often. Designers also face demands from customers. Because of this creative work is important each day. Designers must think of ideas that feel fresh and workable.

In the past these sketches were made by hand. That required. Good drawing skills. It also required an understanding of fabrics, shades and how clothing is made.

Now AI tools are more common in fashion. People use platforms such as Midjourney, DALL·E and Adobe Firefly. With these tools designers can create fashion images faster. The benefit is speed. Another benefit is that designers can try styles and color mixes without wasting much time. Because of this some designers and students have begun to use AI while making fashion illustrations.

Still AI has limits. It cannot truly read feelings or understand intent. It also does not copy a designer's hand in the same way each time. Sometimes AI images show body shapes. Times the fabric looks wrong or the drape feels off. There can also be outfits that're hard to build in real life.

If a designer leans on AI something can fade. Original thinking may slow down. Skills that come from practice can weaken. For that reason AI should be a helper. It should support creativity not replace it.

We am a student, in Fashion Technology. We wanted to know how designers use AI and still keep their creative strength. When we worked on fashion illustrations myself we saw a pattern. Better results came when we used my ideas and AI at the same time. Because of this we chose to study this topic.

Methodology

How we Did This Study

We wanted to see how humans and AI can work together to create fashion art. Here is the process we followed:

Moodboard & Sketching we picked a theme and colors to make a "moodboard." Then, we drew my own fashion sketches by hand to show my original ideas and personal style.

Using AI tools to create fashion illustrations based on the same ideas. We tried many different prompts to see how the AI handled different shapes, styles, and colors.

Comparison Finally, we compared my hand-drawn sketches with the AI's versions. We looked at the details, how creative they were, and how unique each one felt.

Objective:-

This research looks at how human creativity and Generative AI can work in fashion illustration. It shows that AI can help designers come up with ideas and try out styles fast.. Humans bring the real creativity, emotion, personal touch and the final choices. The study finds that AI should be seen as a tool, not something that replaces the fashion designer.

Literature review:

1.Ngai, Lee & Kei (2025)

A Generative Artificial Intelligence (GenAI) System for Fashion Design: A Case Study

Review: looked at the use of Generative Artificial Intelligence in the fashion design process. The study made a GenAI-based system to help designers come up with and develop fashion ideas. The system was checked by people who work in fashion to see how useful it is in the design process. The results show that GenAI can help designers look at design options share ideas

and make the design process faster. The researchers also found problems with data quality the need for computers and ethical issues. The study shows that GenAI can be a tool for fashion designers of taking over creativity.

2. Jang (2026)

From Designer to Curator: Creative Trade-offs in GenAI-Assisted Design

Review:

Jang (2026) looked into how Generative AI changes the thinking and creative work of designers. The study compared design methods with design methods that use GenAI. The results show that Generative AI helps designers create options quickly. This study shows how important judgment is in work that uses AI.

3. Ledendal, Petersson McIntyre & Christoforidou (2026)

The Myth of the Muse: How AI Fashion Design Platforms and Prompting Reshape Creative Agency

Review:

Ledendal, Petersson McIntyre and Christoforidou (2026) looked into how AI fashion-design platforms and prompting're changing the role of fashion designers. The study talks about how designers used to share their ideas through drawing, materials, folding and other physical steps. Now AI introduces prompting and AI-generated results into the process. This research is very important for understanding how people and AI work together in fashion illustration.

4. Patrício (2025)

It Is Giving Inspiration: A Survey Paper on Generative AI in Fashion

Review:

Patrício (2025) did a survey of research about using Generative AI in the fashion industry. The study looked at research from 2016 to 2024. It looked at ways AI is used like making fashion pictures drawing pictures recognizing clothes and changing one image into another. The review shows that Generative AI has become more helpful for trying things and making fashion ideas. The study also talks about technologies such as Generative Adversarial Networks (GANs) and diffusion models. This research gives an overview of how Generative AI has developed and is used in fashion.

5. Human vs. AI: The Battle for Authenticity in Fashion Design and Consumer Response (2024)

Authors: [Check the author names from the journal before submitting]

Review:

The 2024 study called Human vs. AI: The Battle for Authenticity in Fashion Design and Consumer Response looked at the differences between designs made by humans and those made by AI from what consumers think. Through tests the researchers looked at how people see if something is real and how they react to designs made by humans and AI. The results show that people usually like human-made designs more. If people can change AI-made designs they might not think of them as AI-made. The study shows that when people are involved and can take part it changes how they see AI-made fashion.

6. Fashion Design and Generative AI: Categories of Creative Works and Ethical Challenges (2024)

Authors: [Check the author names from the journal before submitting]

Review:

The 2024 study called Fashion Design and Generative AI: Categories of Creative Works and Ethical Challenges looked at the problems with using Generative AI in fashion design. The research focuses on questions about ideas, who gets credit who owns the work and who is considered the creator when both a human and an AI help make something. The study says that as more AI is used there is a need to understand creativity, who's responsible and who owns the work in fashion. These issues are very important for people working with AI in fashion illustration.

7. El-Bassuony, Ibrahim & Abdelsalam (2026)

Artificial Intelligence in Fabric Design: A Critical Review of Technological Advancements and Socio-Creative Implications (2019–2024)

Review:

El-Bassuony, Ibrahim and Abdelsalam (2026) did a review of research on Artificial Intelligence in fabric and textile design. The study looked at changes. How they affect people and creativity. The researchers talk about how AIs changing the way things are made the skills designers need and how people and AI work together. The review also talks about issues like ownership and unfair algorithms. The study says that AI can offer possibilities while also changing what designers do and what they are responsible for.

8. Menold et al. (2026)

Greater Than the Sum of Our Parts: The New Division of Labor in Design with AI

Review:

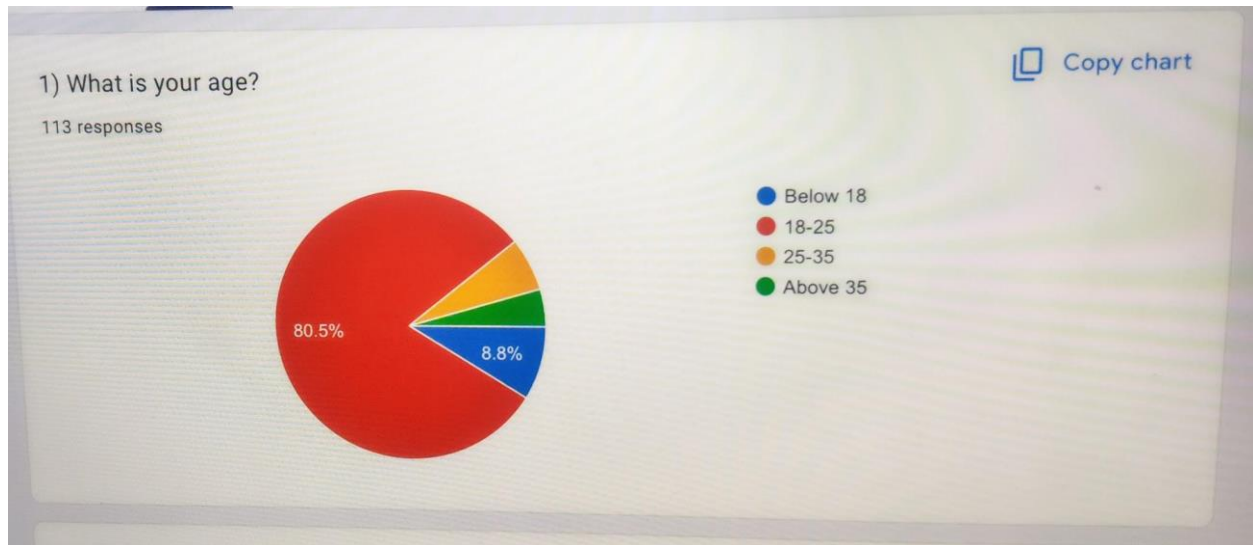
Menold et al. (2026) Looked at how AIs changing the way people and AI share work in the design process. Of seeing AI as taking the place of designers the research looks at how people and AI can each do what they are best at. AI can help designers by making options and handling information while people are still important for understanding, checking, making choices and leading the side. The study says that good work with AI depends on knowing what people and AI can do well. This gives a theory for how fashion illustrators and Generative AI can work

Overall Summary of the 8 Research Papers

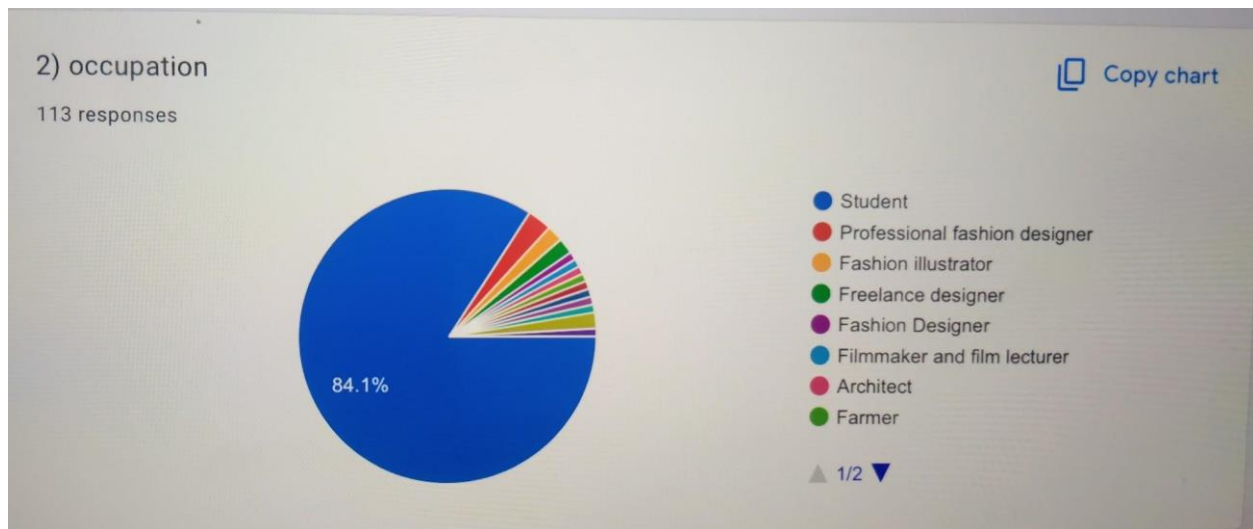
These eight research papers all look at how Generative AIs becoming more important in fashion design and creative work. They show that AI can help designers come up with ideas make fashion pictures and sketches look at options and make the design process faster. The studies also explain that AI is changing the designers job from making designs to guiding choosing organizing checking and improving AI-generated ideas. At the time the papers mention problems, like creativity being real who gets credit who owns the work, ethics and how people and AI work together. Overall the research says that AI should not take over designers. Instead the best results happen when human creativity, judgment and emotional understanding are used with AIs ability to make and explore pictures.

After looking at all the studies I think that Generative AI should be used as a support tool, for designers, not a replacement. AI can help create ideas look at options and save time while humans add creativity, feelings, cultural ideas and the final decision. I also believe that working with AI and people has challenges being original who gets credit, who owns the work and ethics. So good fashion illustration should mix the strengths of both ideas and AI technology.

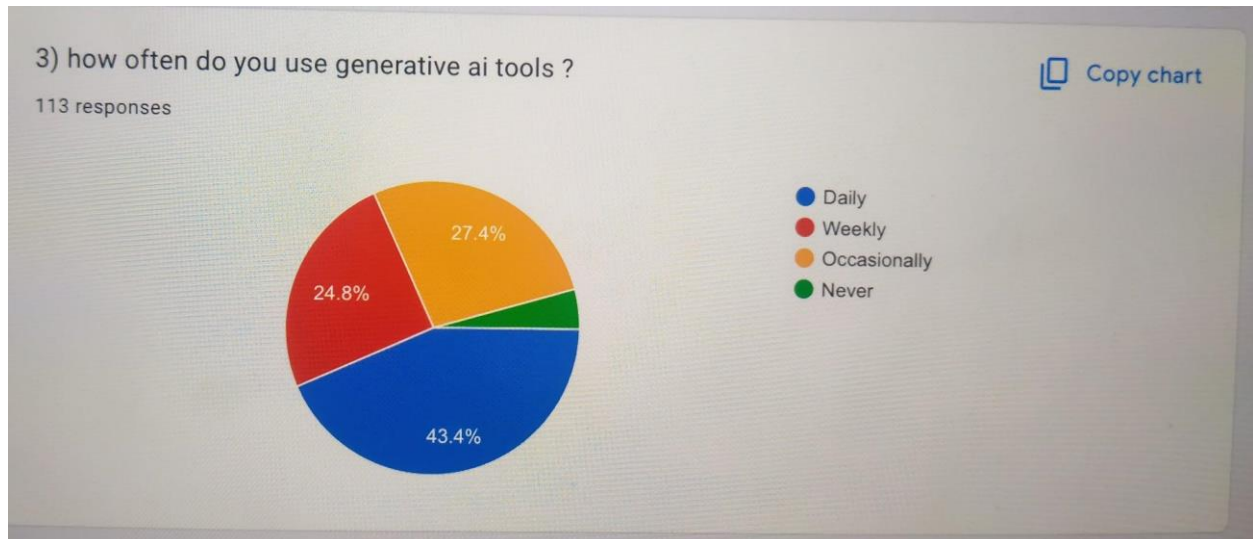
Anylisis/ finding:-



Being young students, this demographic is more open to adopting and experimenting with new technology.



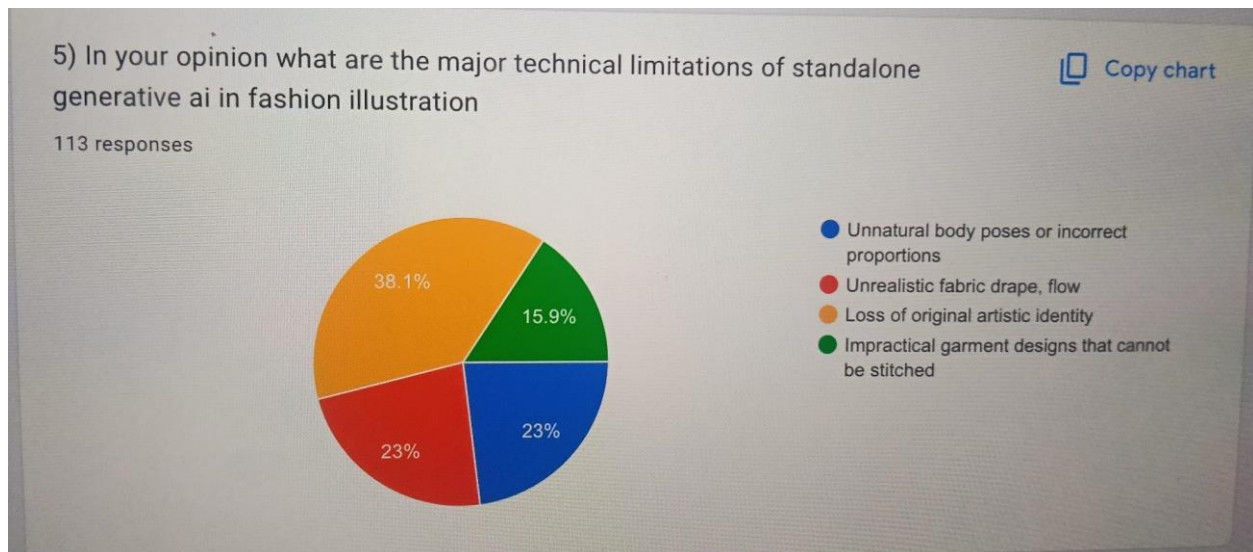
Since the survey focuses on fashion illustration, design students formed the vast majority of respondents.



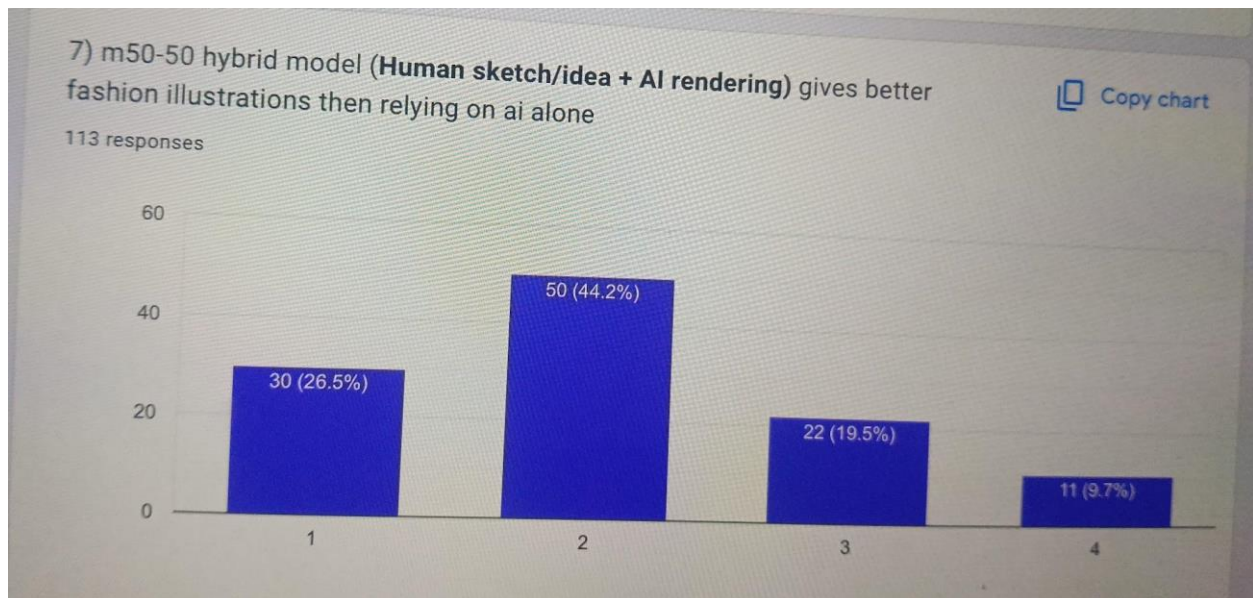
AI has become an essential part of the daily design workflow for quick ideation and brainstorming.



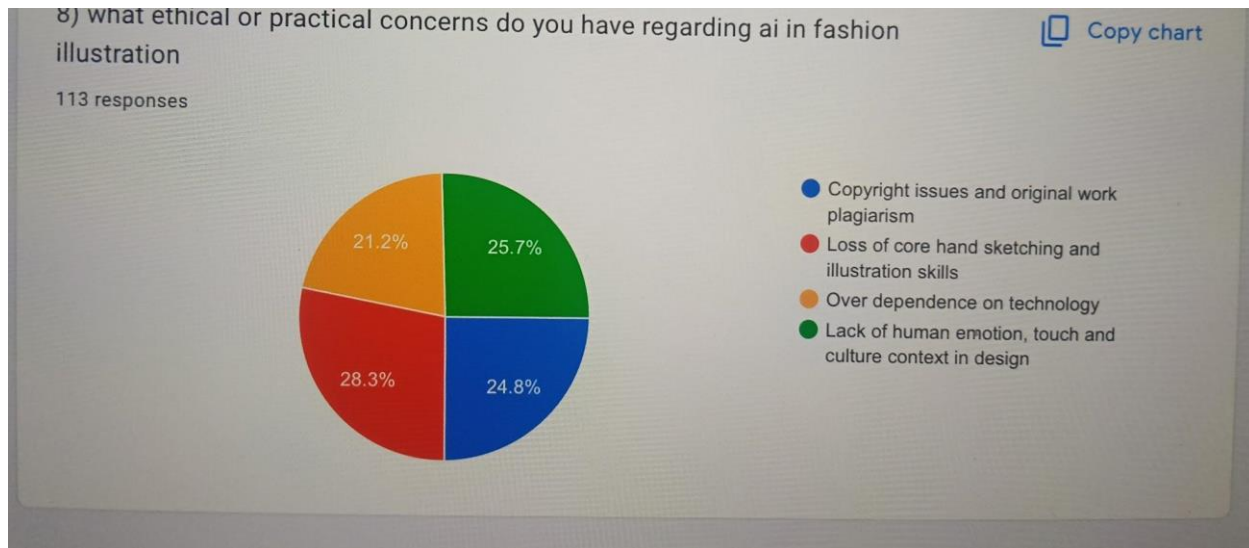
Users fear that over-relying on AI will make designs generic and erode a designer's unique personal style.



AI provides the highest value in the initial stages by helping gather themes, references, and preliminary mood boards.



Combining human creativity and manual drafting with AI's speed yields the most balanced and effective results.



Designers are concerned that AI might dull fundamental hand-drawing skills and strip the emotional, artistic touch from fashion design

AI works fast. AI can create design ideas and color combinations in only a few seconds. AI is a tool when a designer feels stuck and needs fresh ideas.

The Limits of AI: Even though AI is fast AI has no feelings. AI cannot add a touch or deep meaning to a design. Sometimes AI results look repetitive or mechanical.

The Human Touch: Drawing by hand lets humans bring creativity and storytelling to work. A human designer can add details and emotions to a sketch that AI cannot copy.

Referance:-

Link: <https://www.researchgate.net/publication/379352721>

Link: <https://ijrar.org/download.php?file=IJRAR1FBP010.pdf>

Link: https://www.ijset.in/wp-content/uploads/IJSET_V13_issue2_514.pdf

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Link: <https://ojs.aaai.org/index.php/AAAI-SS/article/download/36056/38211/40144>

Link: <https://github.com/llyasviel/ControlNet>

Link: https://medium.com/@efrat_taig/from-text-to-image-to-true-customization-how-lora-and-controlnet-are-transforming-generative-ai-b8b5119bae57

Link: <https://huggingface.com/docs/diffusers/main/en/training/lora>

Link: <https://www.mckinsey.com/industries/retail/our-insights/generative-ai-unlocking-the-future-of-fashion>

Link: <https://www.adobe.com/products/firefly.html>

Conclusion:

To wrap things up artificial intelligence is a tool for fashion art but it will never replace the human mind.

Use it Wisely: Designers shouldn't let the artificial intelligence do all the work. It's best to use intelligence for help while still relying on your own skills and imagination.

The Future: The future of fashion isn't, about computers or just about people—it's about combining technology with human heart to create designs that actually mean something.

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