
FUSAIN - COMPOSING GENERATIVE AI VISUAL PROMPTS USING PEN-BASED INTERACTION

How fashion designers see GenAI tools • What came before FusAIn



How does a fashion curator read FusAI?

Louise Lillo - Fashion Curator & Brand Strategy Consultant - Curated by Amaria

After reading the FusAI paper, she remains globally sceptical about AI in fashion creation, but:

- She sees FusAI as closer to **craft + technology** than to "AI magic".
- The pen-based "composition by material/texture" feels aligned with **real design workflows** (moodboards, prototyping, draping).
- The tool appears **less threatening** than other GenAI systems and more like a complement to the designer.

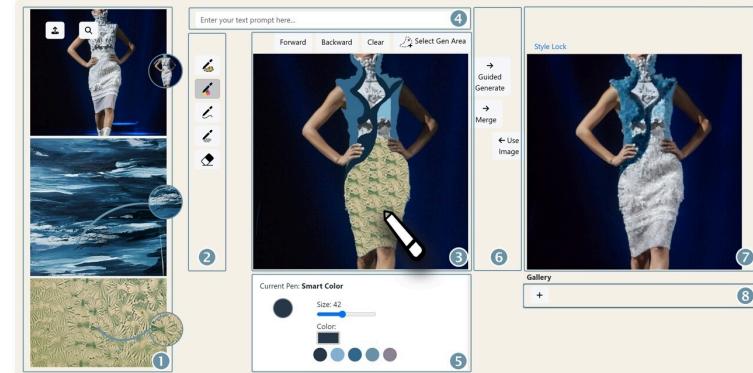


Quote.« De manière générale, je reste assez sceptique vis-à-vis de l'IA dans la création [...] mais dans le cas de FusAI, je dois reconnaître que l'approche peut être pertinente ! » - Louise

What Louise like (and fear) in generative AI

1. Alignment with existing practice

- Works by **adding, recomposing, layering** materials - like building a moodboard on screen.
- Lets designers "go fetch a material, drop it, recombine it" - close to **draping, collage, textile sampling**.
- GenAI becomes a way to **amplify an intention**, not replace it.



2. Ethics & boundaries

- **Authorship:** if the designer keeps control, GenAI feels acceptable (and less risky for copyright).
- **Environmental impact:** heavy compute cost of AI is a concern in an industry already scrutinized for its impact on the environment.
- **Personal limit:** use GenAI as an *occasional support*, not a constant dependency.



Louise. Elle parle d'« alliance artisanat/technologie » et d'un outil qui « amplifie l'intention du designer plutôt qu'une technologie qui cherche à la remplacer ».



"I'm sure I deserve
a lot of criticism."

Commentary in snack-sized mouthfuls

"I want AI to do my laundry and dishes so that I can do art and writing, not for AI to do my art and writing so that I can do my laundry and dishes."

Author and videogame enthusiast **Joanna Maciejewska** nails it
(although bathroom cleaning goes ahead of laundry and dishes)



Before GenAI (1): Analog tools for generating fashion ideas

Early "idea machines" were physical

- Sketchbooks & croquis: fast iteration, exaggeration of silhouette, proportion, movement.



Note. All of these tools already support deconstruction / reconstruction of shapes, textures, and references - the same logic FusAI tries to digitize.

- **Tracing paper & overlays:** copy a base figure, explore multiple variations (necklines, sleeves, drapes).



- **Moodboards:** magazines, Polaroids, fabric scraps, trims.



- **Draping on dress forms:** The mannequin as a physical simulation tool.



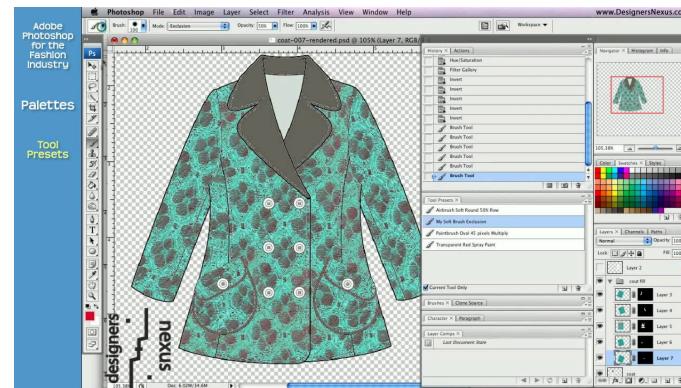
- **Photocopiers & collage:** scale, repeat, distort motifs and silhouettes by cutting and re-pasting.



Before GenAI (2): Digital & semi-generative design tools

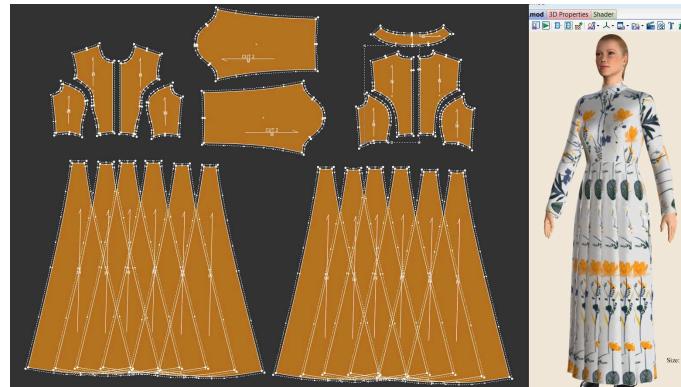
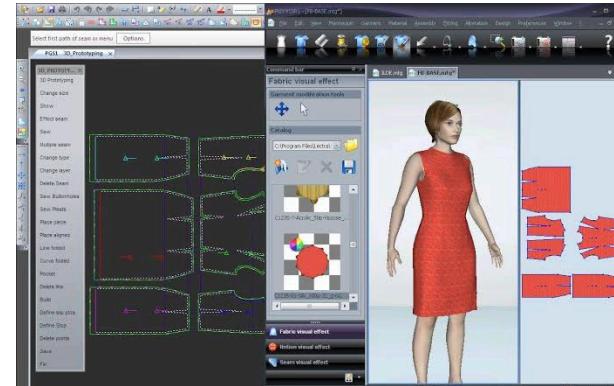
Digitalization of the fashion workflow

- Photoshop / Illustrator: digital croquis, colorways, print repeats, rapid re-coloring and scaling.

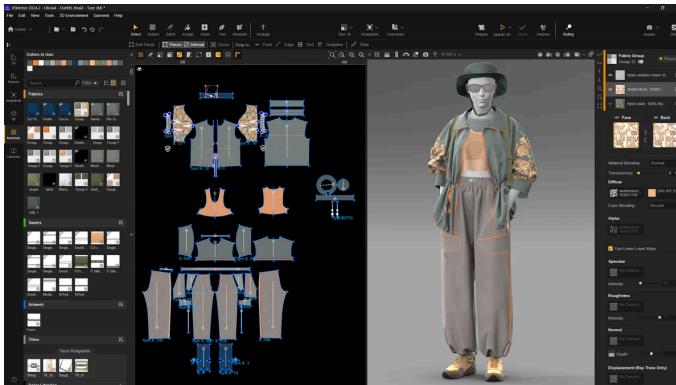
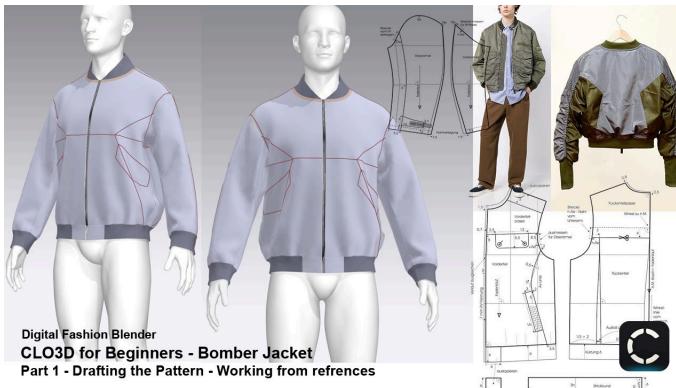


Take-away. FusAI sits on top of a long lineage: from sketchbook → photocopier → Photoshop → CAD/3D → parametric tools – it continues the same goal of helping designers explore, combine, and refine visual ideas.

- **CAD for pattern-making:** tools like Lectra, Gerber, Optitex – parametrized blocks, grading rules.



- **3D garment simulation:** CL03D, Browzwear – virtual drape and fit, fabric libraries, avatar bodies.

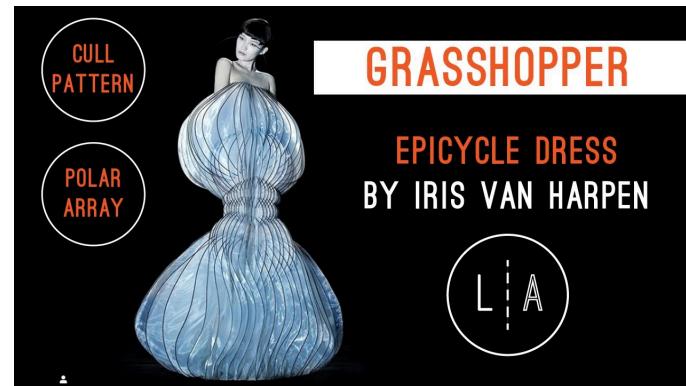


- **Trend & material databases:** online libraries (e.g., textile mills, WGSN-like services) as "search engines" for inspiration.

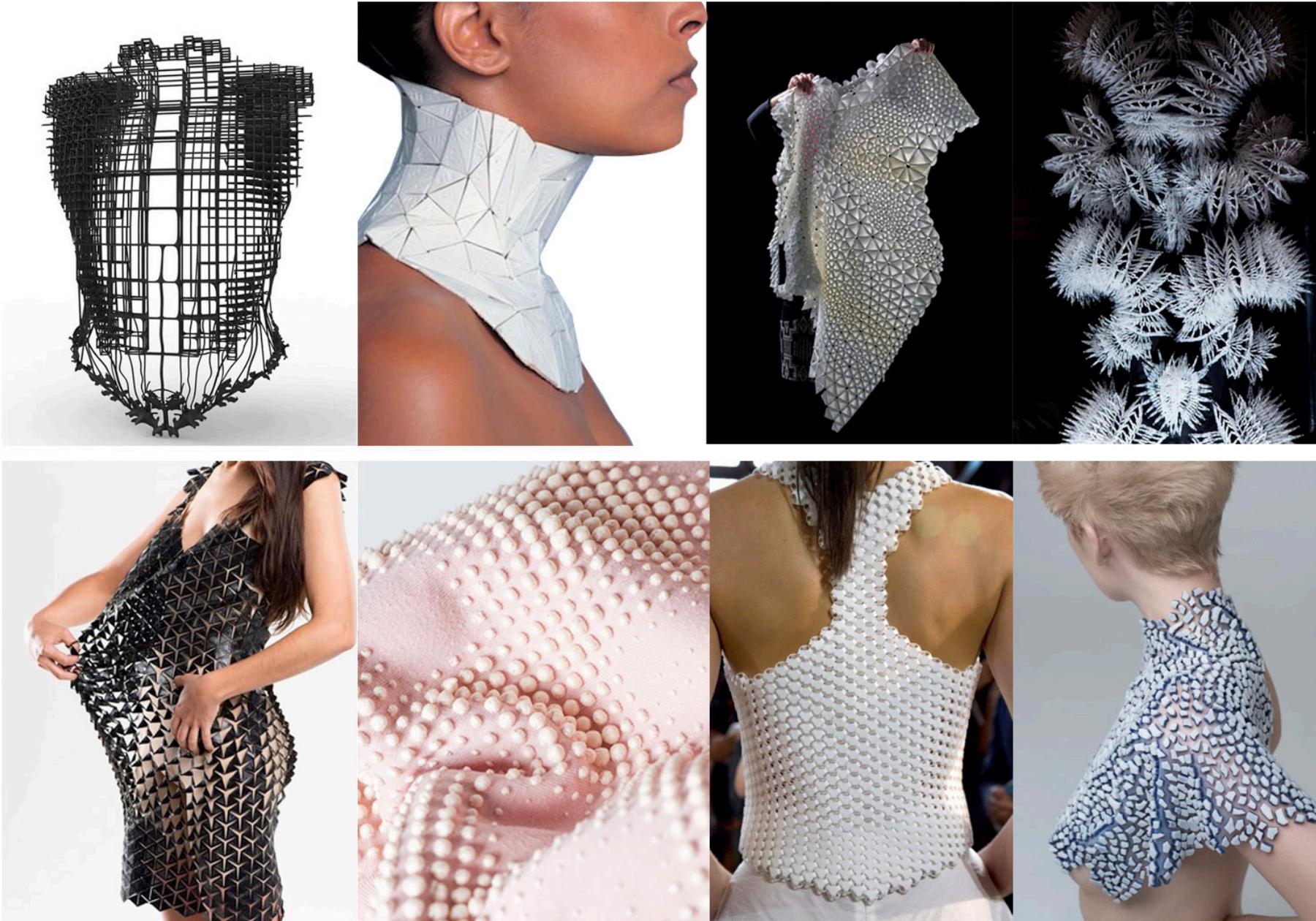


Generative before GenAI

- **Parametric tools in product design:** Grasshopper/Rhino used for shoes, accessories, structures.
- **Rule-based pattern systems:** scripts/macros to auto-generate size ranges or detail variants.
- These systems were already **algorithmic**, but not yet "Learning" from data as GenAI does.



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A CASE STUDY FROM THE INDUSTRY: IRIS VAN HERPEN

Exploring craft, technology & AI in haute-couture



Designing at the intersection of craft & science

- Iris van Herpen's work fuses couture, new materials and scientific inspiration
- She draws on nature, architecture, technology; garments often resemble sculptures, ecosystems, or kinetic structures.
- On AI: She states "AI refines systems, creativity breaks them".

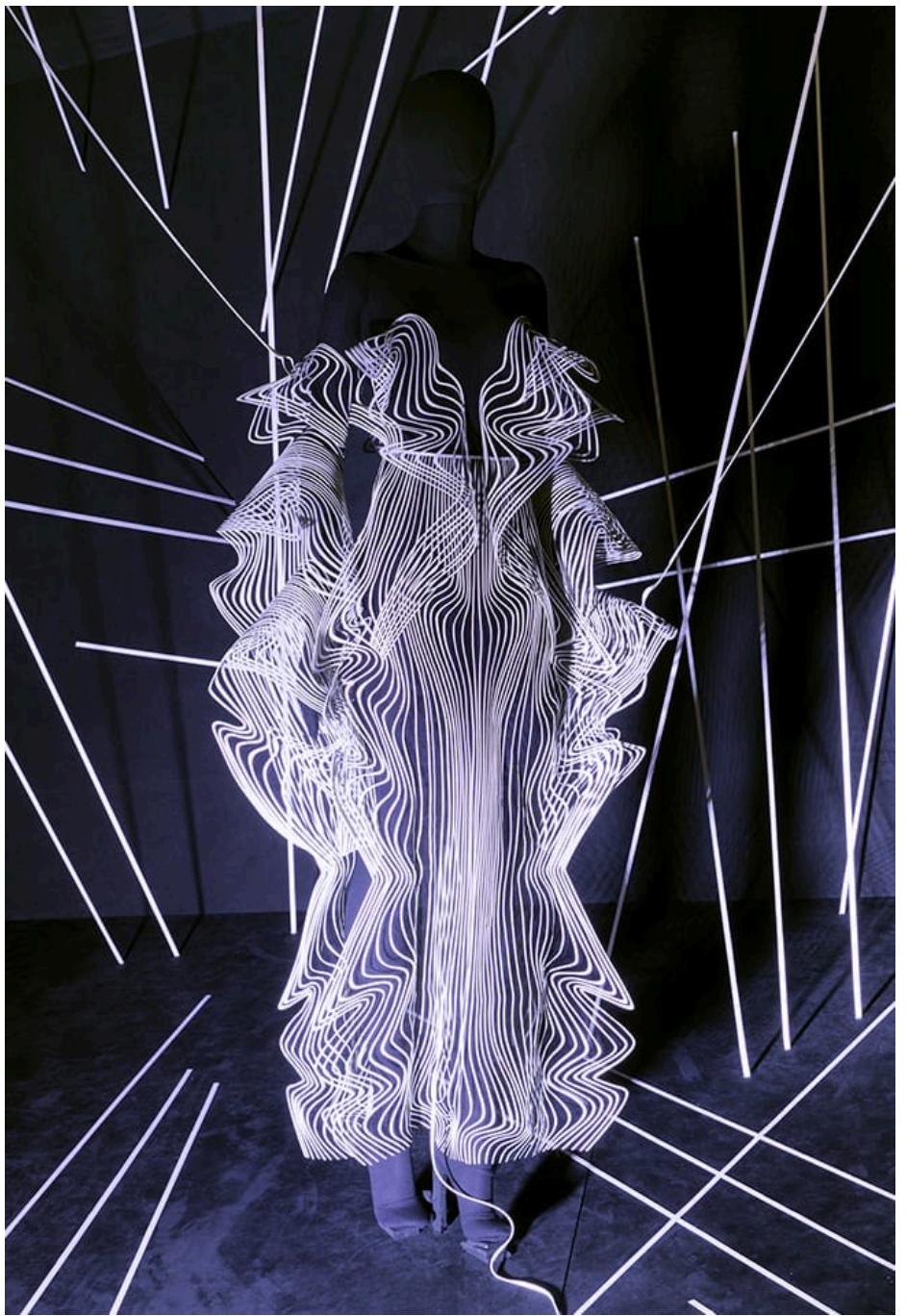


AI in her FW23 Campaign

- For her FW23 collection "Architectonics", van Herpen collaborated with photographer Rob Rusling & creative director Nicola Formichetti to generate AI-driven environments that respond to sea, architecture, and hybrid forms.
- Process: She trained the AI on her design "DNA" + archival references + architectural/biological models, then merged produced backgrounds with couture pieces in a controlled photoshoot.



Photographed by Rob Rusling | Courtesy of Iris van Herpen



Listen

Research Article

Iris van Herpen: Tools

Jessica Hemmings

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Abstract

Dutch fashion designer Iris van Herpen regularly deploys the tools of analogue and digital making in the creation of her collections. This article addresses how van Herpen's making practice moves beyond the familiar hand/machine dichotomy inherited from the Industrial Revolution to consider, where information is available, the making that literally underpins her practice. Drawing examples from four recurring themes of inspiration apparent across van Herpen's collections to date—futuristic craft, water, cloth (and its absence from her early work) and biomimicry—the article uses firsthand accounts from the designer available through fashion's grey literature considered in light of Tim Ingold's recognition of "skilled practice" occurring through tools be they hands or machines. "Iris van Herpen: Tools" is part two of a trilogy of articles and follows "Iris van Herpen: The Body" and precedes "Iris van Herpen: Collaboration".

Keywords:

Handcraft, analogue, digital, futuristic craft, growth

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Introduction

Curator Andrew Bolton described Dutch fashion designer Iris van Herpen's work for the 2016 exhibition *Manus x Machina: Fashion in an Age of Technology* as follows: "Garments combine experimental technology



Weaving the Future: Generative AI and the Reimagining of Fashion Design

Pierre-Marie Chauvin, Hugo Caselles-Dupré, Mathieu de Fayet, Xavier Fresquet, Angèle Merlin, Benjamin Simmenauer

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