Exploring AI-Driven Personalized Fashion: A Survey on Styling Preferences, Challenges, and Privacy Concerns

Fashion is deeply personal, yet traditional tools often fail to address the diverse needs of modern consumers. The paper explores the concept of AI-powered fashion styling and its potential to revolutionize the fashion industry. It highlights the challenges faced by women in personal styling, including outfit selection, layering, modesty, and color matching, and discusses the importance of addressing these challenges through AI-driven solutions.

What is the Research About?

The study investigates how AI-driven tools like StyleMe Mirror can enhance fashion inclusivity by addressing diverse body types, skin tones, and style preferences. It aims to mitigate gender-specific vulnerabilities while incorporating sustainable practices and robust privacy measures, setting a benchmark for ethical AI in fashion.

Research Methodology

The paper describes the methodology used to develop StyleMe Mirror, including a survey of 58 women aged 21-30 to identify their fashion-related challenges and attitudes towards AI-powered styling tools. The survey revealed that 56.9% of respondents experienced outfit confusion, 58.6% struggled with layering, and 56.9% had difficulty with color matching.

Survey Design

- An online survey was conducted among 58 women aged 21–30.
- Participants shared challenges related to styling, layering, color matching, and privacy concerns.
- Data was analyzed using visualization tools to uncover trends and preferences.

AI Tool Development

- StyleMe Mirror was designed to provide personalized outfit suggestions, incorporating features like wardrobe visualization, event-specific recommendations, and culturally sensitive styling.
- Diverse datasets ensured inclusivity across body types and skin tones.

Use Case

- Example: For a job interview, the AI recommended culturally appropriate South Indian attire with tailored accessories, showcasing its ability to provide event-specific and inclusive styling.

Results

Styling Challenges

- 58.6% of participants struggled with layering.
- 56.9% reported challenges with color matching and modesty in styling.
- 37.9% experienced outfit confusion, taking 5–15 minutes to decide.

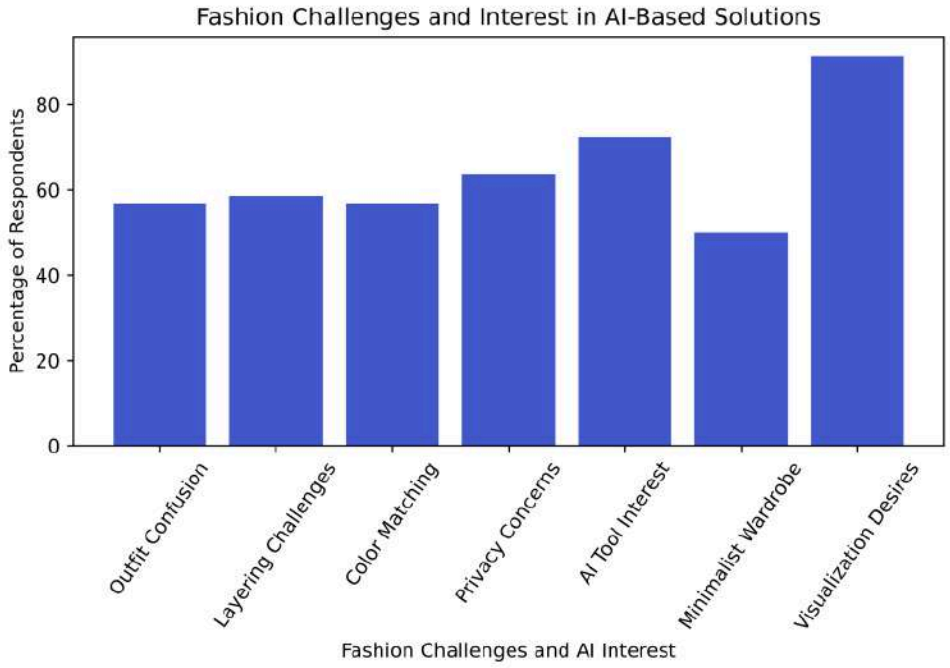

Figure 1: Bar chart depicting the percentage of respondents facing various fashion challenges and their interest in AI-based solutions.

Interest in AI Tools

- 72.4% expressed interest in AI-powered styling tools.
- Privacy concerns were significant, with 81% emphasizing data security.

The survey revealed

- 75.9% of participants identified as having medium skin tones.
- Popular color preferences:
    - Neutrals: 27%
    - Earthy Tones: 24%
    - Pastels: 20%

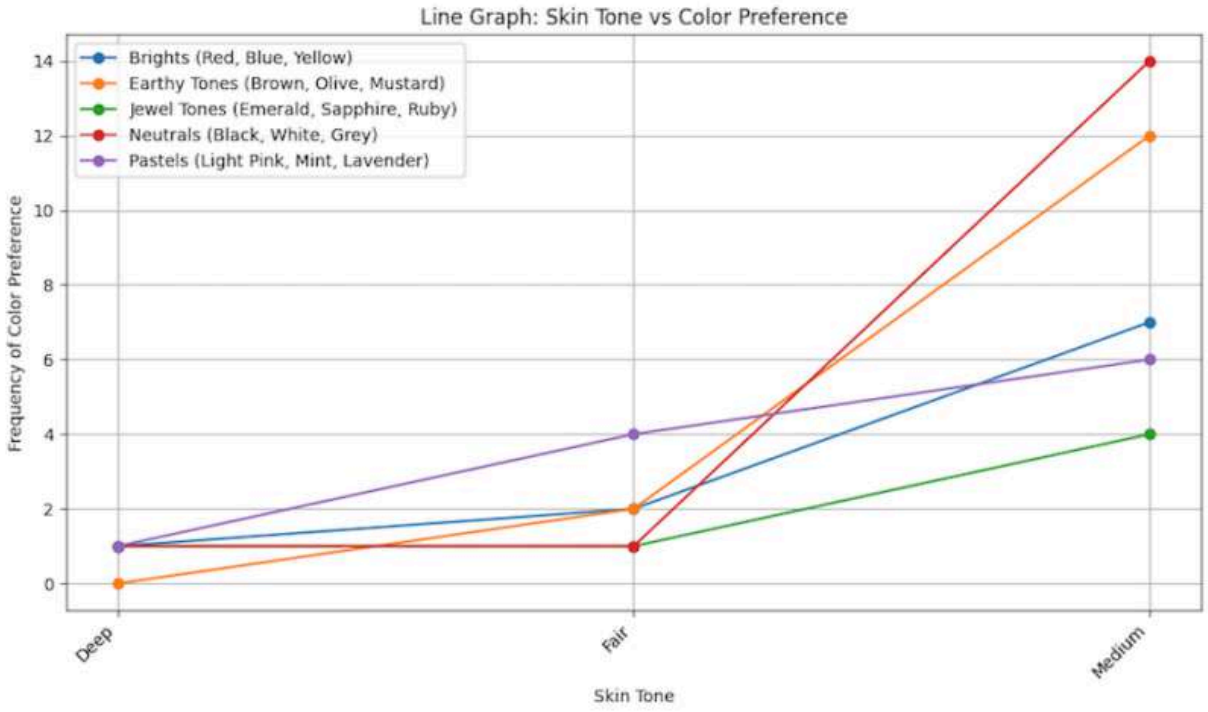

Figure 3: Line graph illustrating the relationship between skin tone and colour preference.

The graph highlights how colour preferences vary significantly with skin tone, suggesting the importance of personalized colour recommendations in fashion styling.

Event-Specific Insights

- 55.2% of participants were working professionals attending frequent events.
- 91.4% valued visualization tools for outfit planning.

Potential Impact

- AI recommendations can reduce decision fatigue, enhance confidence, and foster sustainable consumption by encouraging mindful wardrobe use.

Discussion

The paper presents the results of the survey and discusses the implications for the development of StyleMe Mirror. It highlights the importance of addressing gender-specific vulnerabilities, such as body image concerns and modesty, and the need for AI-powered tools to provide personalized and inclusive styling recommendations. The paper also discusses the potential of AI to promote sustainability and reduce waste in the fashion industry.

Use Case: Professional Styling

For a user preparing for a formal interview, StyleMe Mirror recommends:

- A South Indian-inspired silk-cotton salwar kameez in muted tones.
- Accessories: Simple gold jhumkas and a sleek watch.
- Hairstyle: A polished side bun for a culturally appropriate, confident look.

Sustainability and Inclusivity

- Reduced Waste: Encourages wardrobe optimization, reducing fashion waste.
- Economic Inclusivity: Includes small retailers alongside big brands in its meta-database.

Future Directions

- Broader user testing across diverse demographics.
- Advanced features like augmented reality outfit previews.
- Continued focus on ethical AI practices to enhance trust and inclusivity.

Conclusion

The paper concludes by highlighting the potential of StyleMe Mirror to provide an efficient and privacy-sensitive way for women to make optimal clothing choices. It also emphasizes the need for further research and development to refine the tool and ensure its effectiveness in addressing the fashion-related challenges faced by women.