Lab 3-4

1. Bibliography:

[1] Choi, W., Jang, S., Kim, H. Y., & et al. (2023). Developing an AI-based automated fashion design system: Reflecting the work process of fashion designers. *Fashion and Textiles, 10*(39). https://doi.org/10.1186/s40691-023-00360-w

[2] Renaningtyas, L., Dwitasari, P., & Ramadhani, N. (2023). Implementing the use of AI for analysis and prediction in the fashion industry. *The Academic Research Community Publication*, 7(1). https://doi.org/10.21625/archive.v7i1.928

[3] Wazarkar, S., Patil, S., & Kumar, S. (2020). A bibliometric survey of fashion analysis using artificial intelligence. *Library Philosophy and Practice (e-journal)*, 4462. https://digitalcommons.unl.edu/libphilprac/4462

[4] Hernandez Manzo, D. S., Jiang, Y., Elyan, E., & Isaacs, J. (2024). Artificial intelligence-based conversational agents used for sustainable fashion: A systematic literature review. *International Journal of Human-Computer Interaction*, https://doi.org/10.1080/10447318.2024.2352920

[5] Dwita Adilah, Andry Alamsyah. (2019). Model prediction of the next runway model using decision tree and random forest (Case study: Big Four Fashion Week). e-Proceeding of Management, 6(3), 5840.https://core.ac.uk/outputs/299934585/?utm_source=pdf&utm_medium=banner&utm_campaign=pdf-decoration-v1

[6] Thomassey, S., & Zeng, X. (2018). Introduction: Artificial intelligence for fashion industry in the big data era. In S. Thomassey & X. Zeng (Eds.), *Artificial intelligence for fashion industry in the big data era* (pp. 1–7). Springer. https://doi.org/10.1007/978-981-13-0080-6_1

[7] Wang, L. C., Zeng, X. Y., Koehl, L., & Chen, Y. (2015). Intelligent fashion recommender system: Fuzzy logic in personalized garment design. *IEEE Transactions on Human-Machine Systems, 45*(1), 95–109. https://doi.org/10.1109/THMS.2014.2364398

[8] Zhu, Y., Zeng, X., Koehl, L., Lageat, T., Charbonneau, A., & Chaigneau, C. (2010). A general methodology for analyzing fashion-oriented textile

products using sensory evaluation. *Food Quality and Preference, 21*(8), 1068–1076. **https://doi.org/10.1016/j.foodqual.2010.07.014**
[9] Nayak, R., Singh, A., Padhye, R., et al. (2015). RFID in textile and clothing manufacturing: Technology and challenges. *Fashion and Textiles, 2*(9). https://doi.org/10.1186/s40691-015-0034-9
[10] Moon, K. L., & Ngai, E. W. T. (2008). The adoption of RFID in fashion retailing: A business value-added framework. *Industrial Management & Data Systems, 108*(5), 596–612. https://doi.org/10.1108/02635570810876732
[11] Mok, P. Y., Xu, J., Wang, X. X., Fan, J. T., Kwok, Y. L., & Xin, J. H. (2013). An IGA-based design support system for realistic and practical fashion designs. *Computer-Aided Design, 45*(11), 1442–1458. https://doi.org/10.1016/j.cad.2013.06.014
[12] Hui, P. C. L., & Choi, T.-M. (2016). Using artificial neural networks to improve decision making in apparel supply chain systems. In T. M. Choi (Ed.), *Information systems for the fashion and apparel industry* (pp. 97–107). Woodhead Publishing. https://doi.org/10.1016/B978-0-08-100571-2.00005-1
[13] Bahlmann, C., Heidemann, G., & Ritter, H. (1999). Artificial neural networks for automated quality control of textile seams. *Pattern Recognition, 32*(6), 1049–1060. https://doi.org/10.1016/S0031-3203(98)00128-9
[14] Brahmadeep, S., & Thomassey, S. (2016). Intelligent demand forecasting systems for fast fashion. In T. M. Choi (Ed.), *Information systems for the fashion and apparel industry* (pp. 145–161). Woodhead Publishing. https://doi.org/10.1016/B978-0-08-100571-2.00008-7
[15]Giri, C., Jain, S., Zeng, X., & Bruniaux, P. (2019). A detailed review of artificial intelligence applied in the fashion and apparel industry. *IEEE Access, 7*, 95376–95396. https://doi.org/10.1109/ACCESS.2019.2928979

2. Structure

I. Abstract

➔ AI's role in sustainable fashion and its contributions to sustainable practices

II. Introduction

➔ An overview of AI's potential for better recycling, waste reduction, and resource efficiency. AI can track garments through their lifecycle, suggesting maintenance and recycling options directly to consumers.

III. Literature Review:

➔ Review prior work on AI for sustainable practices in fashion, mainly focusing on role of AI applications in design

IV. Methodology:

➔ Provide ideas for potential AI applications (such as machine learning) and the ways in which they might help the fashion industry.

V. Implementation and Case Studies:

➔ Anticipated or simulated results about the effects of consumer satisfaction and waste reduction.

VI. Conclusion:

➔ An overview of the results and recommendations for further study.

3. Plan

Hyphotesis:

The integration of artificial intelligence (AI) in fashion enhances creativity, efficiency, and sustainability, leading to more innovative products that align with consumer preferences.

Methodology:

- **Literature Review**: Examine existing studies on AI applications in fashion.
- **Data Collection**: Collect information regarding fashion trends, consumer preferences, and AI technologies.
- **AI Model Development**: Design AI algorithms for trend analysis and design generation.
- **Experimentation**: Implement the AI models in a controlled environment, generating design prototypes based on current trends.

Description of original approach:

➔ Use AI to analyze consumer trends and materials to create eco-friendly fashion.

➔ AI might forecast designs that use sustainable materials or repurpose unsold inventory to cut down on waste.

Description of the experimental work that needs to be done:

Use AI to produce fashion prototypes

Evaluate AI-generated designs

Evaluate success metrics like time saved, cost reduction, or consumer appeal

4. Original contribution

In what way can it be a contribution to the state of research in the field ?

The research could benefit the larger sustainable fashion movement by offering practical insights on how AI can cut waste through precise demand forecasting, eco-friendly material selection, or production schedule optimization.

To what question is answering?

How might artificial intelligence improve the productivity and originality of fashion design processes?

How can AI contribute to improving sustainability in fashion?

Is it possible for engineers and designers to collaborate to enhance fashion?