QU HONG

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My research interests focus on the integration of Artificial Intelligence (AI) with design, particularly in the field of fashion. In my previous work, I explored the use of deep learning and computer vision techniques for assisting fashion design and decorative pattern design. Currently, my research is centered around the integration of AI with various fashion & design-related tasks.

EDUCTAION

2019.09-2023.04

PHD， THE HONG KONG POLYTECHNIC UNIVERSITY

Research topic: Intelligent systems for digital pattern analysis and design support

2015.08-2016.06

MASTER， THE HONG KONG POLYTECHNIC UNIVERSITY

2011.09-2015.06

BACHELOR， DONGHUA UNIVERSITY

Research topic: Study on the structure of the straight-front shenyi in the Han Dynasty（汉代直裾深衣）

WORK EXPERIENCE

2018.12-2019.09

RESEARCH ASSISTANT， THE HONG KONG POLYTECHNIC UNIVERSITY

Assist in the completion of research projects within the group. Specific tasks include sample making, contacting factories, 3D body scanning and data processing, and graphic design work.

2017.09-2018.10

DESIGNER, ONESTOP CO., LTD.

1. Accessory design for the American market includes a variety of products, such as woven and knit scarves, hats, gloves, bags, and graphic designs.
2. The design development process can be divided into two parts: in-house design, which is more focused on creativity, and customer-driven design, which is developed according to specific requirements and needs.

2016.08-2017.08

ASSISTANT DESIGNER, METERSBONWE CO., LTD.

Design assistance works, e.g., fashion information collection, garment development sheet drawing, and connecting factories.

PUBLICATIONS

CONFERENCE

1. Qu, H., Zhou, Y., Chau, K. P., & Mok, P. Y., Repeated pattern extraction with knowledge-based attention and semantic embeddings, 14th International Conference on Computer Graphics, Visualization, Computer Vision and Image Processing, 2020.
2. Qu, H., Chau, K. P., & Mok, P. Y. Detection of Repeated Patterns with CNN Activations and Similarity Matching, 1st ITC-KSCT Joint Symposium, 2022.
3. Qu, H., Chau, K. P., & Mok, P. Y., Design Elements Extraction Based on Unsupervised Segmentation and Compact Vectorization, 16th International Conference on Computer Graphics, Visualization, Computer Vision and Image Processing, 2022.
4. Qu, H., Zhou, Y., Chau, K. P., & Mok, P. Y., Automatic design elements extraction and vectorization for design support, International Conference on Advances in Design, Materials and Manufacturing Technologies (ICADMMT), 2023.

JOURNAL

1. Qu, H., Zhou, Y., Chau, K. P., & Mok, Efficient and Effective Detection of Repeated Pattern from Fronto-Parallel Images with Unknown Visual Contents, Under Review of Engineering Applications of Artificial Intelligence, 2023.

2. Qu, H., Zhou, Y., Chau, K. P., & Mok, P. Y., Recycling/Upcycling Graphic Design - Automatic Design Elements Extraction and Vectorization, Under Review of Computer-Aided Design, 2023.
3. Qu, H., Zhou, Y., Chau, K. P., & Mok, P. Y., Editable Graphic Pattern Generation for Textile, to be submitted to Textile Research Journal, 2023.

TEACHING

Foundations of Apparel Construction (Lab class) (64 hours)

ACADEMIC SERVICES

Reviewer for the International Textile and Apparel Association Conference (ITAA), the Fractals (SCI 1), and other journals and conferences related to fashion and textile.

SKILLS & CERTIFICATES

- Experienced in Python and PyTorch framework, with a strong background in computer vision, image processing, and a deep understanding of Convolutional Neural Networks (CNN).
- Proficient in garment sewing pattern making, with a comprehensive understanding of the manufacturing process for garments and accessories (including woven and knitted materials).
- Experienced in using drawing software, with a passion for both graphic design and academic drawing. Proficient in Adobe Illustrator and Photoshop.