

# SHANGRONG WU

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## RESEARCH INTEREST

Human-AI Interaction/Collaboration, Information Retrieval, Human-Computer Interaction (HCI)

## EDUCATION

### National University of Singapore

Master of Computing (General Track)

Jan 2025 - May 2026 (Expected)

### Hong Kong Polytechnic University

Bachelor of Science in Enterprise Engineering with Management | Major GPA: 3.54/4.30

Sept 2020 - May 2024

Department of Industrial and Systems Engineering

*Second Class Honours Division 1*

Honor: Dean's Honors List, Faculty of Engineering

## PUBLICATION

**Shangrong Wu**, Yanghong Zhou, Yang Chen, Feng Zhang, and P.Y. Mok (2025). Chain-of-Thought Re-ranking for Image Retrieval Tasks. arXiv preprint arXiv:2509.14746., Under review. [Paper](#) [Link](#) [GitHub](#)

## RESEARCH EXPERIENCE

### Investigate Human Delegation Behavior in Human-AI Collaboration

National University of Singapore | Advisor: Prof. Varun Karamshetty

Aug 2025 – Present

Singapore

- **Modeling:** Formulated and validated a behavioral mixture model to quantify two distinct latent parameters in human decision-making: the skill to identify the optimal performer and the bias for or against delegating to an AI.
- **Experimental Design:** Designing a multi-stage, incentive-compatible experiment using Qualtrics for deployment on large-scale participant pool on Amazon MTurk to elicit choices under controlled conditions.
- **Next Step:** Poised to analyze the collected dataset to identify key factors influencing effective task delegation.

### Enhancing VLM-Based Image Retrieval by Reranking With MLLMs

CAFI Research Group, HKPU | Advisor: Prof. Yanghong Zhou, Prof. Tracy Mok

May 2025 - Aug 2025

Hong Kong

- Proposed CoTRR, a novel chain-of-thought re-ranking method that enhances the ranking of target images and is compatible with various retrieval tasks.
- Introduces a query deconstruction prompt and a listwise ranking prompt, along with an image evaluation paradigm, to better understand user intention and to more effectively evaluate, analyze, and re-rank the retrieved results.
- Achieved a 10% improvement in Recall@1 on multiple Image Retrieval datasets, including Flickr30k, MSCOCO, CIR, CIRCO, and VisDial, establishing a new state-of-the-art on three image retrieval tasks.
- One paper submitted to ICASSP 2026.

### Enhancing Multimodal Fashion Retrieval in Applications

CAFI Research Group, HKPU | Advisor: Prof. Yanghong Zhou, Prof. Tracy Mok

Jun 2024 - Dec 2024

Hong Kong

- Investigated cross-modal retrieval techniques using Vision-Language Model (VLM) to enhance fashion intelligence applications.
- Fine-tuned foundational AI models on Fashion IQ, Fashion200K and DeepFashion datasets for fashion retrieval and achieved state-of-the-art performance.
- Evaluated model performance using precision and recall metrics, visualizing retrieval results to facilitate in-depth analysis.

- Built proof-of-concept application and deployed it for presentation.

**Web-based multimodal retrieval system for e-commerce platform**

Sept 2023 - Apr 2024

Department of Industrial and Systems Engineering, HKPU | Advisor: Prof. Roy W.C. Law

*Hong Kong*

- Conducted literature review on e-commerce economics and state-of-the-art retrieval techniques.
- Designed and developed a full-stack web-based system integrating OpenAI's CLIP model.
- Built front-end and backend components using Python, HTML, CSS, and JavaScript.

**WORK EXPERIENCE**

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**Computer Aided Fashion Intelligence Research Group - HKPU**

Jun 2023 - Dec 2024

Full Stack Developer

*Hong Kong*

- Developed interactive Web and Mobile APPs in front-end.
- Built and maintained backend service using FAST API with Python.
- Modified and Maintained MySQL database.
- Maintained a Linux server environment for production.
- Collaborated with project managers, UI/UX designers, and other developers.
- Utilized Git for version control to streamline development workflows.

**TEACHING EXPERIENCE**

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**Tutor - HKPU**

Sept 2024 - Oct 2024

Course: ITC3214M Omni-channel Marketing and Retailing

*Hong Kong*

- Conducted tutorial classes for undergraduate students on User Experience (UX) Design for mobile applications.
- Guided students through the practical development and implementation of mobile apps.

**PROGRAMMING SKILLS AND TOOLS**

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**Programming Languages:** Python / Pytorch / Java / C++ / JavaScript / HTML / CSS**Front-End Development:** Angular / React / Ionic**Back-End Development:** FastAPI / Linux / MySQL**LANGUAGE SKILL**

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English (IELTS: 7.5), Mandarin Chinese(Native), Cantonese