Real-Time Virtual Try-On Using Generative AI

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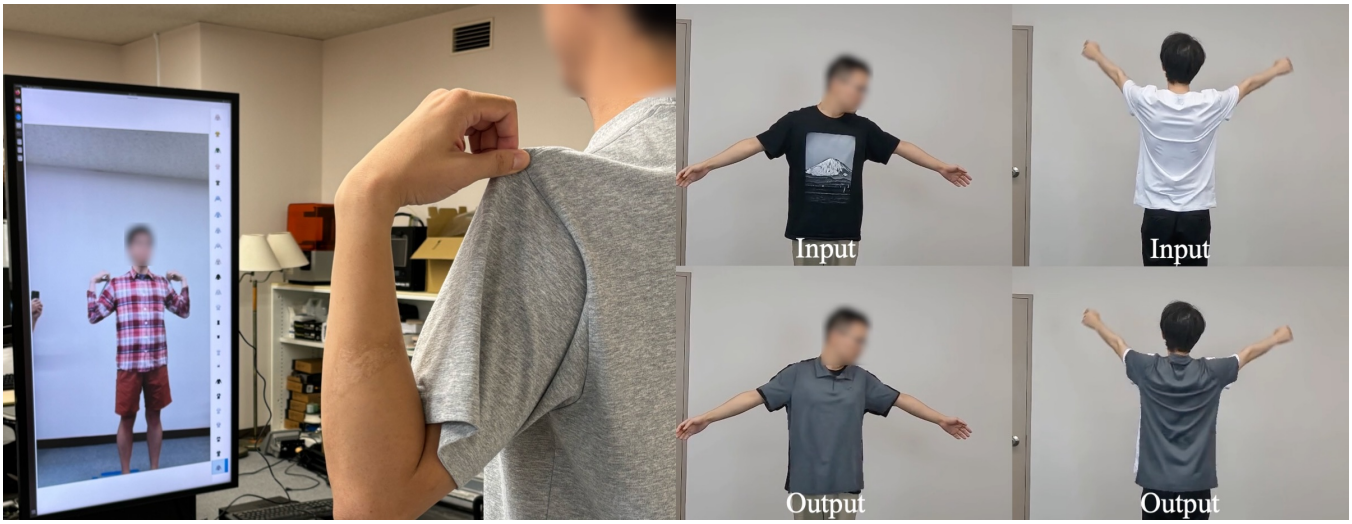

Figure 1: Our virtual try-on system generates photo-realistic garment images that align seamlessly with the human body in real-time.

Abstract

We introduce a novel real-time virtual try-on system powered by generative AI. Our demonstration highlights key features, including real-time virtual try-on, realistic wrinkle generation, and human-garment interaction. We showcase the system's ability to produce highly plausible results across diverse poses and perspectives, offering a seamless and interactive experience for users.

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1 Introduction

Existing 3D model-based virtual try-on methods achieve real-time performance but lack photo-realism, while image-based approaches produce high-quality, photo-realistic results but cannot operate in real-time. To address this trade-off, we propose a garment-specific, image-based virtual try-on method that achieves real-time performance. Our approach involves collecting a dedicated dataset for each garment and training a specialized network for it. Additionally, we introduce a novel intermediate representation that ensures precise alignment between the user's body and the synthesized

garment without the need for measurement devices. This representation also enables interactive user-garment experiences.

2 Technical contributions

Our technical contributions can be summarized as follows:

- **Low-barrier dataset collection**: Previous per-garment virtual try-on methods [Chong et al. 2021; Wu et al. 2024] require the use of a customized robotic mannequin, making their results difficult to reproduce. Our method does not require any customized hardware for dataset collection.
- **Precise alignment without measurement devices**: Previous per-garment methods [Chong et al. 2021; Wu et al. 2024] either require the user to wear a physical measurement garment or exhibit noticeable misalignment between the human body and the synthesized garment. Our proposed intermediate representation ensures precise alignment without the need for any measurement devices.
- **Human-garment interaction**: Our intermediate representation facilitates natural human-garment interaction, providing users with a more immersive and realistic virtual try-on experience.

3 Conclusion

Our real-time virtual try-on system showcases the potential of generative AI for real-time virtual try-on. It introduces a low-barrier dataset collection method compared to previous approaches, and ensures precise alignment without requiring any measurement devices. Additionally, our system supports human-garment interaction without the need for haptic devices or bodysuits. This opens up new possibilities for virtual try-on technology, and we anticipate further advancements and future applications in this field.

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