Smart Mirror Fashion AI

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Results Demo

1. Testing Data

- Images
- Video


2. Evaluation

- Parsing
- Alignment
- CP-VTON+ GMM /Try-On Modules

3. Improvement

- Keypoints
- Human Parsing


4. Comparison

- CP-VTON
- ShineOn
- Ours (SMFAI)



Testing **Dataset**

Person

- VVT
- Online Shop Video
- Custom Video

Cloth

- FPI
- Amazon Shop
- VTON

Result: **Video Frames**

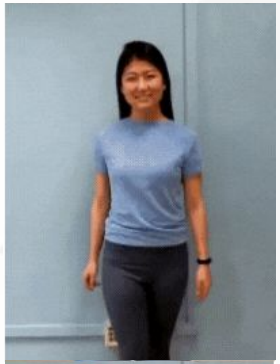
ref person

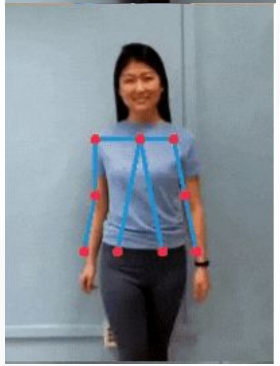
Data source: Superdry Inc.

Result: **Online Store Video**

Data source: Superdry Inc.

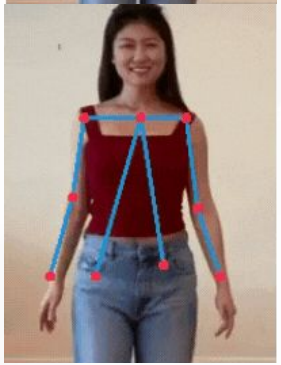
Result: **Custom Video**





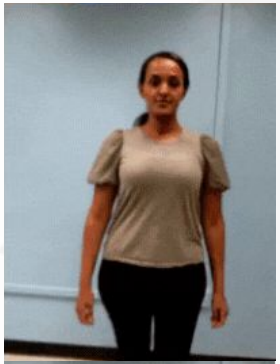
Video: Xiaocen Xie, Outfit: CP-VTON

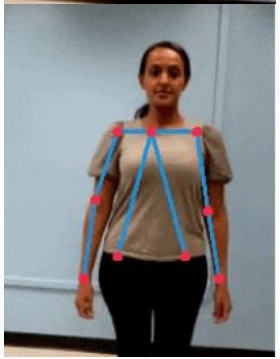
Result: **Custom Video**



Video: Xiaocen Xie, Outfit: CP-VTON

Result: **Custom Video**





Video: Ililta G, Outfit: CP-VTON

Testing **Findings**

Ref. Video

- Black outfits do not transfer well.
- Uneven video lighting interfere optical flow.
- Image resolution will affect quality of parsing result.
- Camera view works better with the front-angle.

Cloth Image

- Collar and hems
- Color and style complexity
- CP-VTON+ only trained tops

Testing **Evaluation**

Parsing

- Model: SCHP
- mIoU on LIP test set: 82.29%.
- 19 segments

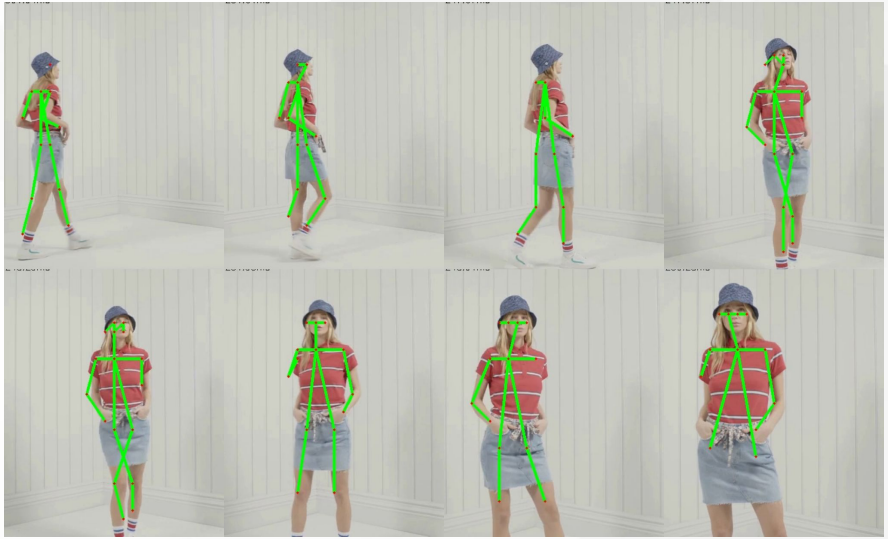
Alignment

- Model OpenPose
- Self-supervised
- 18 fine-tuned COCO format keypoints

GMM and Try-On

- Model: CP-VTON+
- IoU: 0.8425 on VTON test set
- SSIM: 0.8163

Improved **Pose Tracking**



Sample pose tracking test result using pre-trained OpenPose.

Improved keypoint tracking after adjusting hyperparameters.

Data source: Superdry Inc.

Improved **Keypoint Detection**

Pre-trained OpenPose keypoint detection.

Fine-tuned OpenPose keypoint detection result.

https://github.com/CMU-Perceptual-Computing-Lab/openpose

Improved **Body Parsing**

CP-VTON and **ShionOn** exclude neck area for body parsing.

Our model includes 19 + **neck** area for human segments.

https://github.com/GoGoDuck912/Self-Correction-Human-Parsing

Model Comparisons: **VVT frames**

Cloth	Person	CP-VTON	ShineOn	Ours
				
				

https://github.com/andrewjong/ShineOn-Virtual-Tryon, https://github.com/sergeywong/cp-vton

Model Comparisons: **VVT dataset**

Cloth	Person	CP-VTON	ShineOn	Ours
		 	 	

https://github.com/andrewjong/ShineOn-Virtual-Tryon, https://github.com/sergeywong/cp-vton

Demo: System **Integration**

Data source: Superdry Inc.