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## Supplementary Material for Towards 3D Human Shape Recovery Under Clothing

Xin Chen<sup>1</sup> Anqi Pang<sup>1</sup> Yu Zhu<sup>2</sup> Yuwei Li<sup>1</sup> Xi Luo<sup>1</sup>  
 Ge Zhang<sup>1</sup> Peihao Wang<sup>1</sup> Yingliang Zhang<sup>1</sup> Shiying Li<sup>1</sup> Jingyi Yu<sup>1</sup>  
<sup>1</sup>ShanghaiTech University <sup>2</sup>DGene Digital

{chenxin2,liyw,luoxi,lishy1,yujingyi}@shanghaitech.edu.cn yu.zhu@plex-vr.com

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In this supplementary materials, We show more experimental results on fitness prediction and body shape estimation, and results on clothing retargeting to a new avatar.

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### 1. Fitness Prediction and Body Shape Estimation

We have carried out more experiments based on our networks to predict fitness and estimate body shape with clothing segmentation, as shown in Figure 1. We specifically focus on the challenging cases, eg., pose with heavy occlusions (rows 1st-3rd), in puffy clothing and in an extremely loose skirt or bench coat (rows 4th and 5th). Our results show accurate clothing segmentation, and more reliable fitness prediction and body shape estimation, such as the mesh in a bench coat at the fourth row compared with that at the third mesh of Figure 2 in the submitted manuscript.

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### 2. Clothing Retargeting and Virtual Tryon

We have conducted experiments on clothing retargeting on avatars in different body shapes, as shown in Figures 2. We align the body shapes of two meshes to slimmer and heavier based on SMPL [1], and fit them in the clothing reshaped. Further, we exploit the estimated body shape for virtual tryon, as shown in Figure 3. We put new clothes on the body estimated, and vary body poses to try variation of the clothing. Our results show that body shape estimation and clothing segmentation based on our fitness prediction enables clothing retargeting on a new avatar in different body shapes and poses for applications such as animation creation and virtual tryon.

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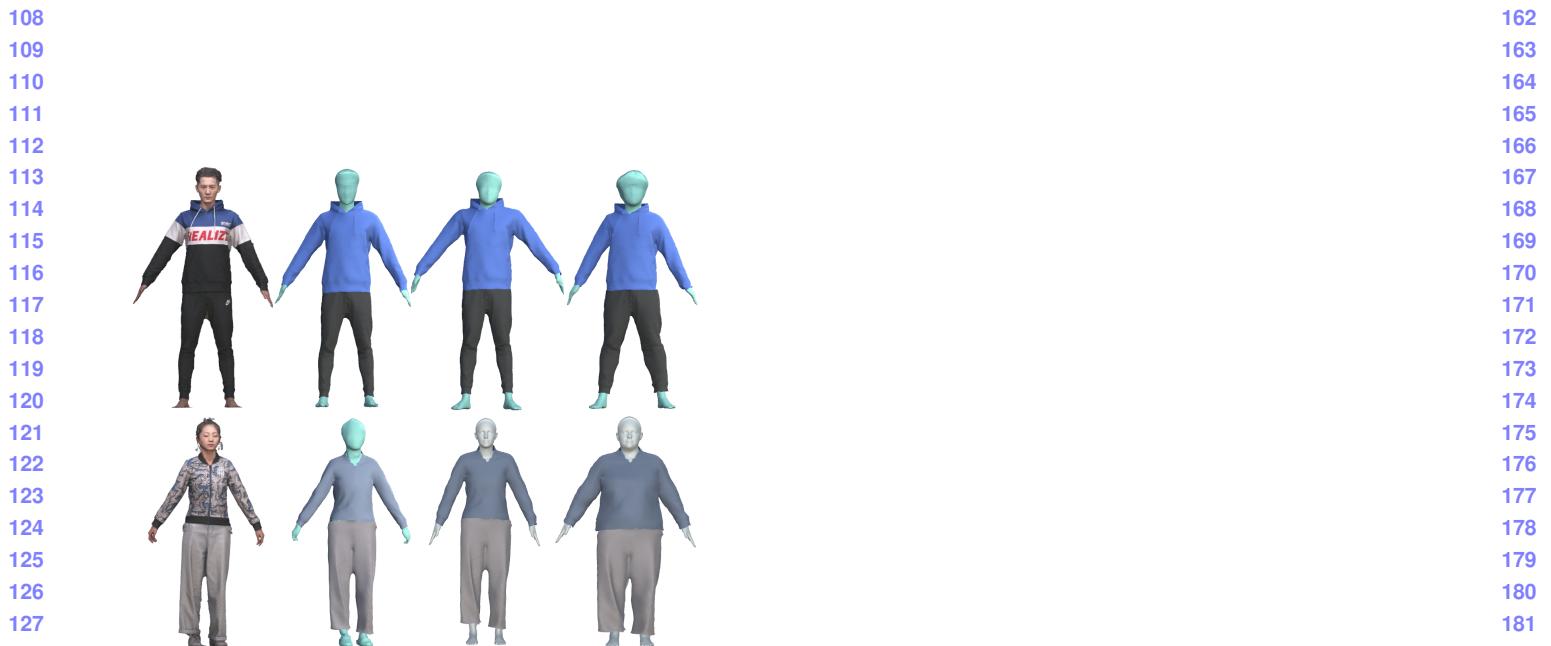
### References

- [1] M. Loper, N. Mahmood, J. Romero, G. Pons-Moll, and M. J. Black. Smpl: A skinned multi-person linear model. *ACM Transactions on Graphics (TOG)*, 34(6):248, 2015.



Figure 1. Fitness prediction, body shape estimation and clothing segmentation in challenging cases: pose with heavy occlusions (rows 1st-3rd), meshes in an extremely loose clothing (row 4th and 5th).

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Figure 2. Clothing retargeting on thinner or fatter body shapes. From left to right: 3D meshes, body shape and clothing estimated, clothing retargeting on slimmer and heavier body shapes.

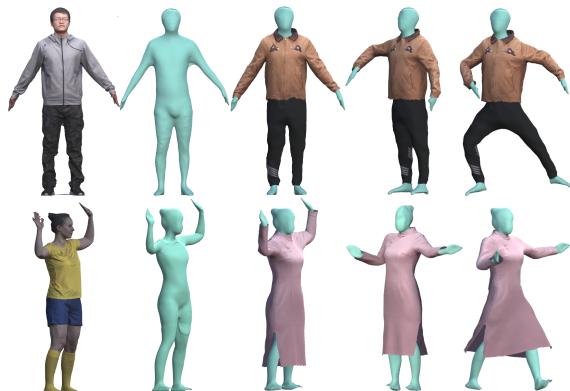


Figure 3. Virtual tryon in different poses and clothing styles. From left to right: 3D meshes, body shape estimated, virtual tryon in different clothing styles, and virtual tryon in different poses.