M. Battogtokh & R. Borgo / Simple Techniques for a Novel Human Body Pose Optimisation Using Differentiable Inverse Rendering

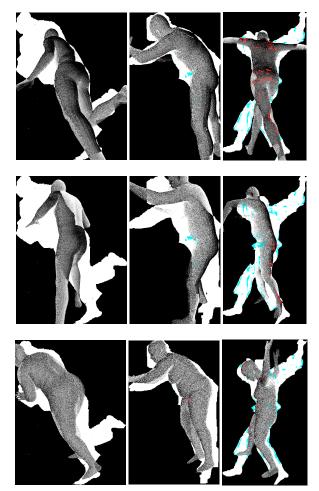


Figure 1: Result by our method (top row) compared to SMPLify-X [PCG^{*}19] (mid row), and Sengupta et al. [SBC21] (bottom row). Quantitatively, our method beats both (see Table 1, Section 4). Qualitatively, although method by [SBC21] offers good results, our method holds a clear and significant advantage for the target image in the first column because only ours achieved the raising of the right leg.

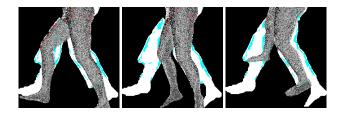


Figure 2: Result of our selective optimisation (left) compared to SMPLify-X [PCG^{*}19] (mid) and Sengupta et al. [SBC21] (right). Our method produced the best result both qualitatively and quantitatively (see Table 1 in Section 4).

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References

[PCG*19] PAVLAKOS G., CHOUTAS V., GHORBANI N., BOLKART T., OSMAN A. A. A., TZIONAS D., BLACK M. J.: Expressive body capture: 3d hands, face, and body from a single image. In CVPR (2019). 1

[SBC21] SENGUPTA A., BUDVYTIS I., CIPOLLA R.: Hierarchical Kinematic Probability Distributions for 3D Human Shape and Pose Estimation from Images in the Wild. In *ICCV* (2021). URL: https://github.com/akashsengupta1997/HierarchicalProbabilistic3DHuman. 1