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3D Reconstruction of Human Body Based on Gender Classification

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Abstract : SMPL-X was a powerful parametric human body model that included male, neutral, and female models, with significant gender differences between these three models. During the process of 3D human body reconstruction, the correct selection of standard templates was crucial for obtaining accurate results. To address this issue, we developed an efficient gender classification algorithm to automatically select the appropriate template for 3D human body reconstruction. The key to this gender classification algorithm was the precise analysis of human body features. By using the SMPL-X model, the algorithm could detect and identify gender features of the human body, thereby determining which standard template should be used. The accuracy of this algorithm made the 3D reconstruction process more accurate and reliable, as it could adjust model parameters based on individual gender differences. SMPL-X and the related gender classification algorithm have brought important advancements to the field of 3D human body reconstruction. By accurately selecting standard templates, they have improved the accuracy of reconstruction and have broad potential in various application fields. These technologies continue to drive the development of the 3D reconstruction field, providing us with more realistic and accurate human body models.

Keywords : gender classification, joint detection, SMPL-X, 3D reconstruction
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