

## Application of Smplify-X Algorithm with Enhanced Gender Classifier in 3D Human Pose Estimation

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**Abstract :** The widespread application of 3D human body reconstruction spans various fields. Smplify-X, an algorithm reliant on single-image input, employs three distinct body parameter templates, necessitating gender classification of individuals within the input image. Researchers employed a ResNet18 network to train a gender classifier within the Smplify-X framework, setting the threshold at 0.9, designating images falling below this threshold as having neutral gender. This model achieved 62.38% accurate predictions and 7.54% incorrect predictions. Our improvement involved refining the MobileNet network, resulting in a raised threshold of 0.97. Consequently, we attained 78.89% accurate predictions and a mere 0.2% incorrect predictions, markedly enhancing prediction precision and enabling more precise 3D human body reconstruction.

**Keywords :** SMPLX, mobileNet, gender classification, 3D human reconstruction

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