

One of the most exciting research areas in computer vision and graphics is the reconstruction of 3D geometry. The main purpose of this study is to produce accurate and more detailed 3D geometry of the human figure, which can be applied to animation, games, and healthcare. There are several studies that have reconstructed the geometry or 3D models of the human body, but there are still shortcomings where the resulting mesh for poses and extreme clothing shapes does not match the ground truth. Two prominent approaches in this domain are PIFu and ICON, each offering unique advantages in automatic 3D human reconstruction. In this paper, we performed a refinement of both PIFu and ICON taking a differentiated approach and comparing both results to the original method. Our efforts resulted in improvements, with both refined versions outperforming their respective original methods in our comprehensive evaluation results. The refined version of ICON showed a remarkable capability in body poses reconstruction, due to its use of SMPL-X for accurate underclothing body shape estimation. In contrast, the refined PIFu method excelled in texture rendering, a notable performance that included not only front mesh texture prediction but also back mesh texture prediction. These results highlight the complementary advances made by both methods, advancing the current field of 3D reconstruction of single-view 2D images and their applications in augmented reality, 3D modeling, and other fields.