

**Additional material for the paper:  
"Human Motion Tracking by Registering an Articulated  
Surface to 3-D Points and Normals"**

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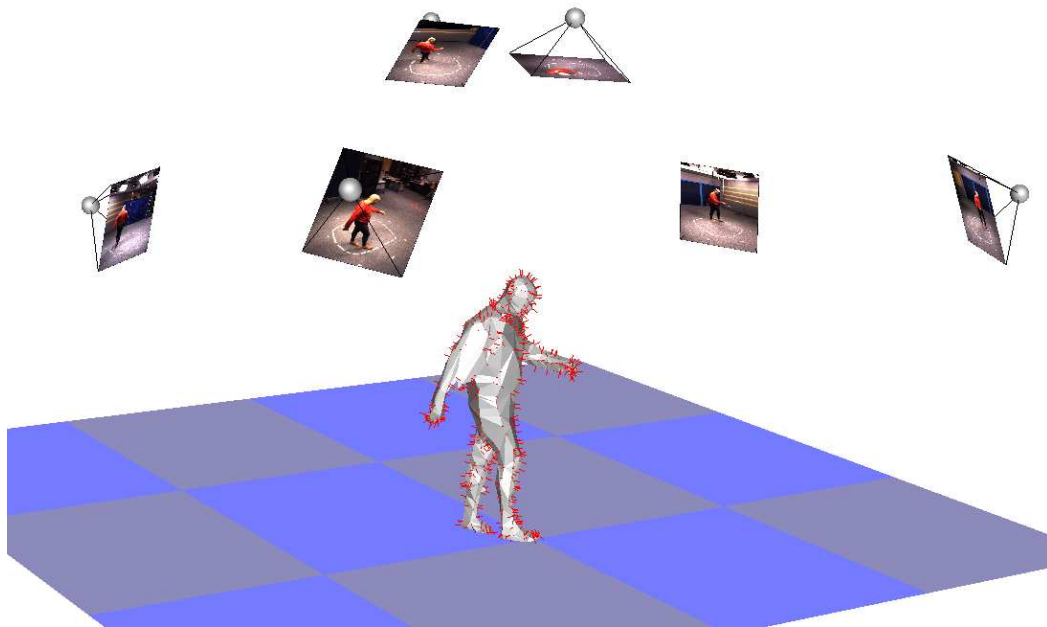


Figure 1: A global view of the camera setup used for the experiments. Six calibrated and finely synchronized cameras looking at moving person. The 3-D points (connected to form a mesh for the purpose of this display) as well as 3-D unit vectors (shown as a needle field) are extracted from the six silhouettes.

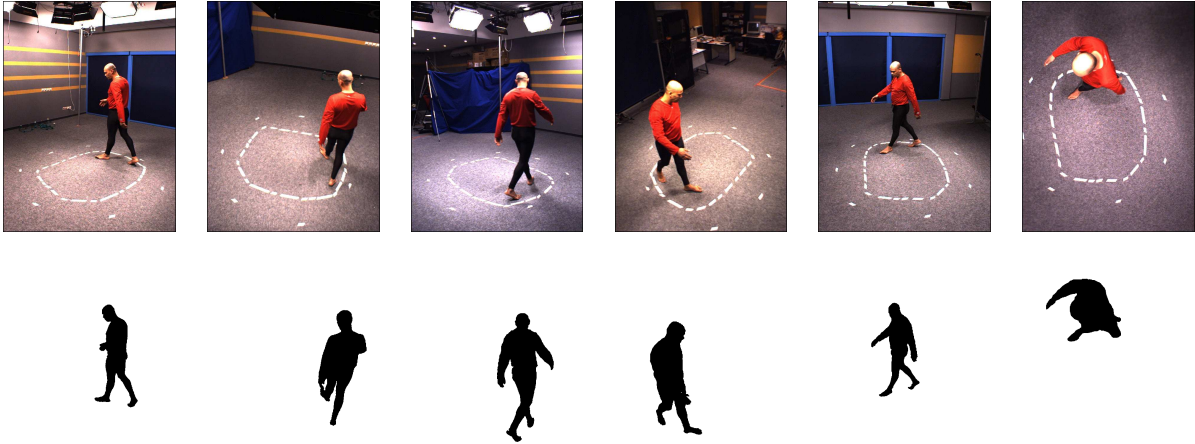


Figure 2: An example of multiple-camera data used in this paper. The top row shows six images gathered with the six. The bottom row shows the silhouettes extracted from these images.

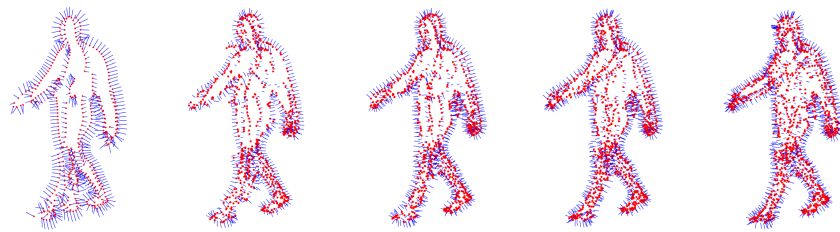


Figure 3: An example of gathering 3-D points and normals from multiple silhouettes. This shows the 3-D points and normals reconstructed with 2, 3, 4, 5, or 6 cameras.

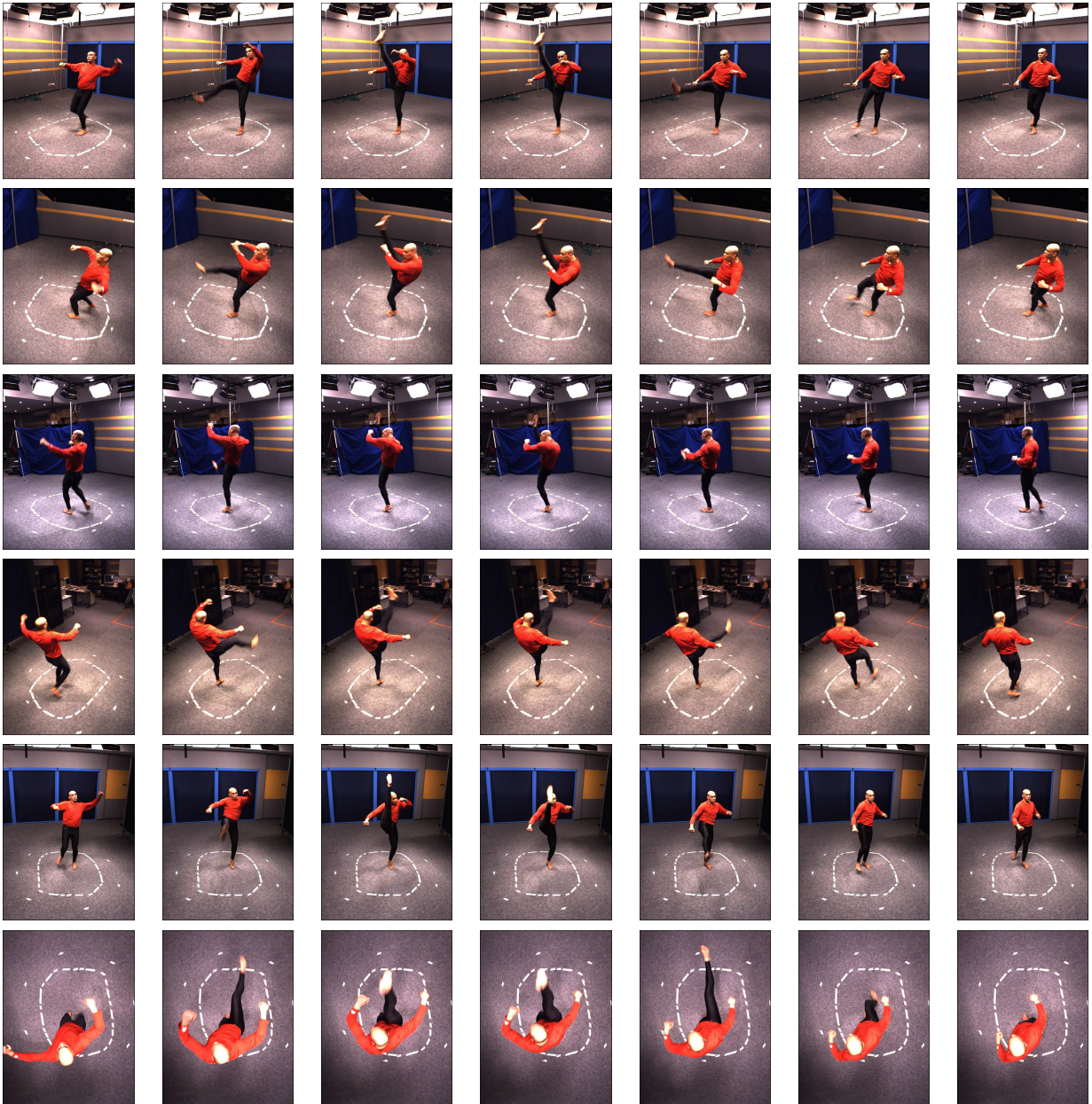


Figure 4: The taekwondo sequence. From top to bottom: camera 1 through camera 6. From left to right: sequences of seven images from the six videos shown here at 7 frames/second. The videos are grabbed at 28 frames/second.

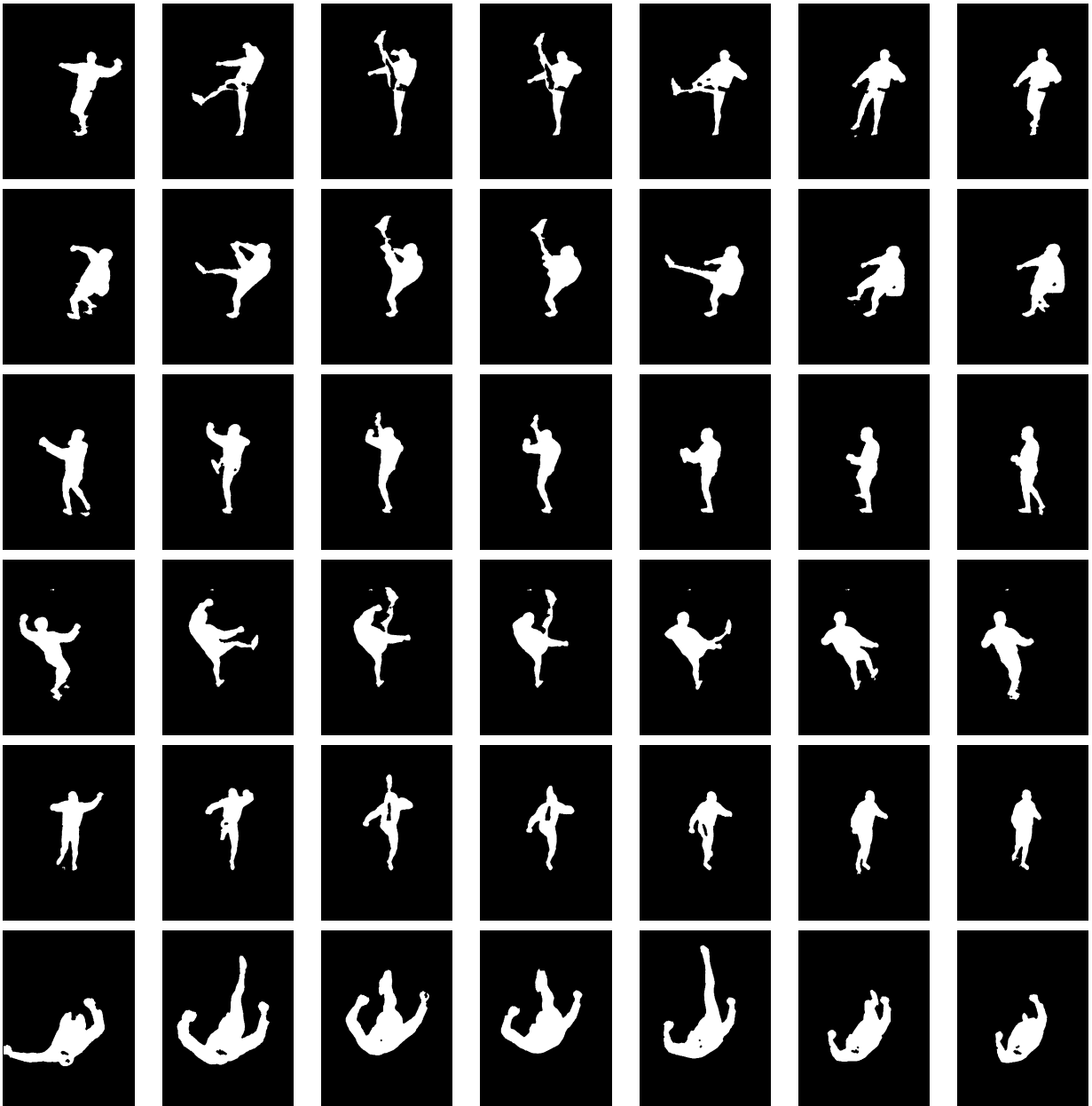


Figure 5: The binary silhouettes associated with the taekwondo sequence.



Figure 6: The 3-D points and normals associated with the taekwondo sequence. For completeness, the data are shown from the viewpoints of all six cameras.

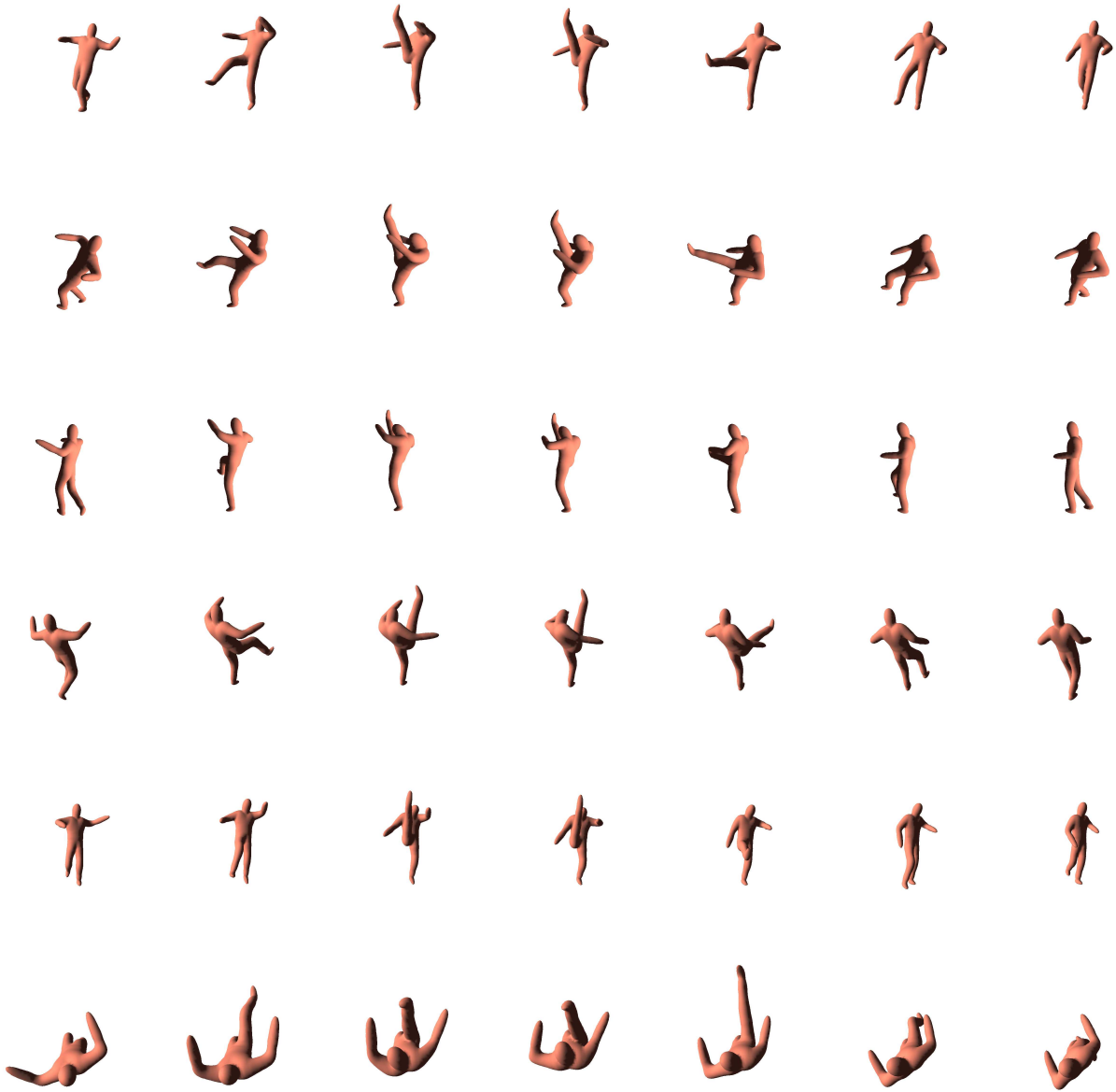


Figure 7: The implicit articulated surface fitted to the taekwondo sequence using both points and normals.



Figure 8: The implicit articulated surface fitted to the taekwondo sequence using only points. One should note the error in tracking one of the thighs.



Figure 9: The leaning sequence. From top to bottom: camera 1 through camera 6. From left to right: sequences of seven images from the six videos shown at 14 frames/second. The videos are grabbed at 28 frames/second.



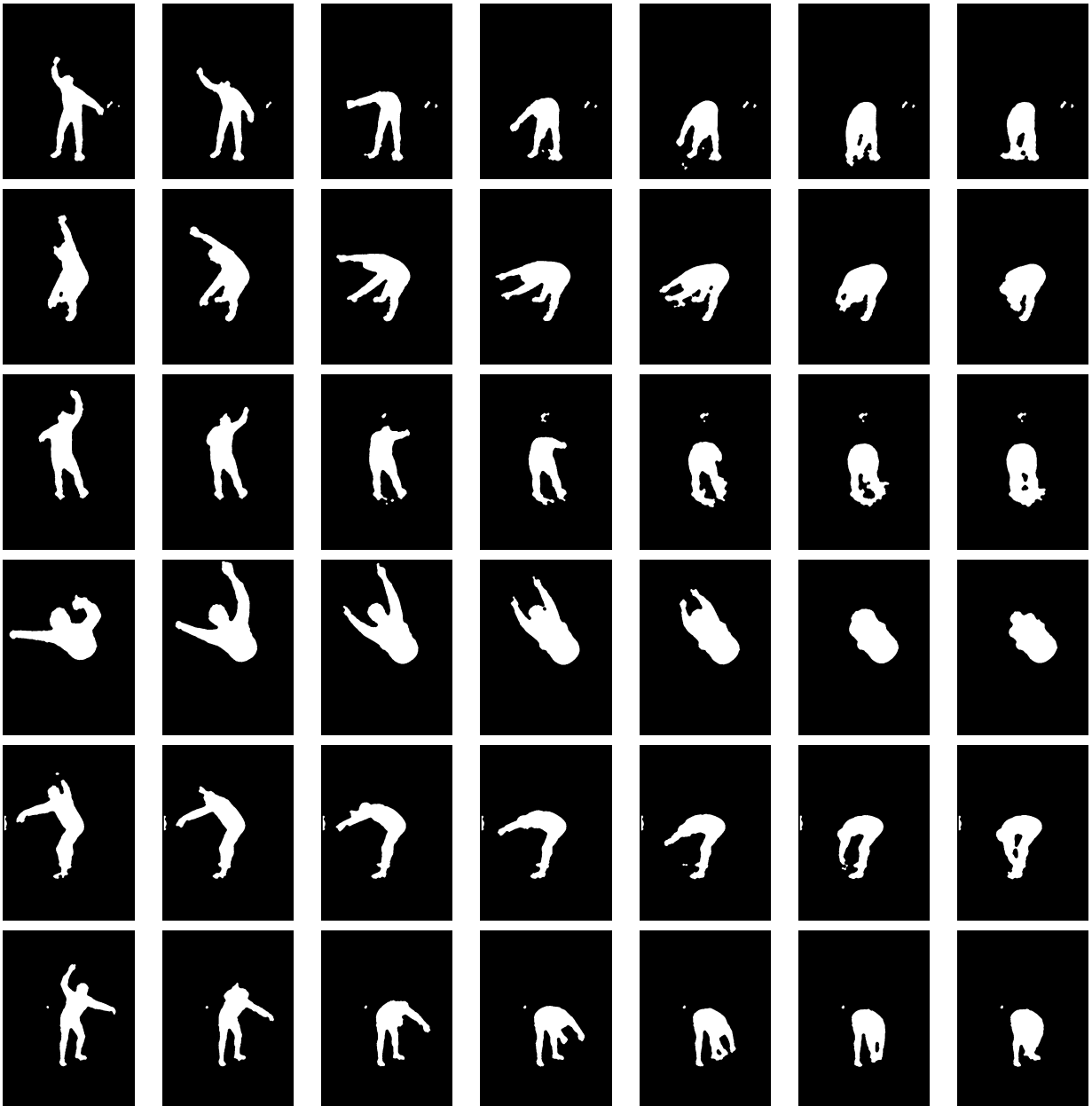


Figure 10: The silhouettes of the leaning sequence.



Figure 11: The implicit articulated surface fitted to the leaning sequence using both points and normals..