

A Framework for an Accurate Point Cloud Based Registration of Full 3D Human Body Scans

Supplementary material

Vladislav Golyanik^{1,2}

Gerd Reis²

Bertram Taetz¹

Didier Stricker^{1,2}

¹Department of Computer Science, University of Kaiserslautern

²Department Augmented Vision, DFKI GmbH

This supplementary material lists parameters used in the experiments (Sec. A), and provides additional results with a template containing $\sim 10^4$ points (Sec. B).

A Pipeline parameters

The parameters of the proposed pipeline for human scan-template registration are listed in Table 1. We use the same parameter set in all experiments.

B Additional experimental results

We also tested the proposed pipeline with a lower resolved 10k template for several scans. Exemplary results are shown in Fig. 1. This experiment demonstrates that the pipeline can work both with different scans and different templates, but, of course, the accuracy is lower than for the high-resoluted template.

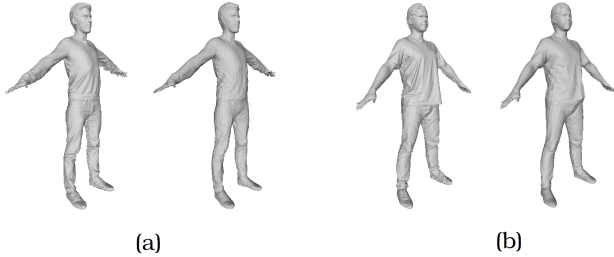


Figure 1: Results of the registration pipeline with a template containing 10^4 points. For both (a) and (b), the original scan is on the left and the registration result on the right respectively.

Step	α	template s	scan s	theor. speed-up	runtime, sec
1) pre-alignment	10^{-5}	1 (no subs.)	1 (no subs.)	1	61.8
2) global non-rigid registration	10^{-3}	5	10	13.7	1744.9
3) partial non-rigid registration	10^{-5}	5	1 (no subs.)	{1.2; 3}	289.0

Table 1: Parameters of the proposed pipeline for particular steps summarised.