CALVIS: Chest, wAist and peLVIS circumference from 3D human body meshes for deep learning

Anonymous ICCV submission

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Abstract

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1. Introduction

We conduct two experiments. In the first experiment we synthesize 10 human body meshes. Then we apply our method to calculate chest, waist and pelvis circumference. We evaluate the results qualitatively. We observe that the measurements can indeed be used to estimate the shape of a person. The second experiment serves as a proof-of-concept where we input the calculated human dimensions to an artificial neural network. The idea is to establish the plausibility of our approach. After having trained the network with our data, we proof that the network is able to conduct this task.

Problem statement: given a 3D human body mesh $\mathcal{M}$ we look for a method able to automatically output chest, waist and pelvis circumference.

2. Approach

We asume that the body mesh has RTP orientation. If the mesh has another orientation we can always rotate and translate the mesh to brig it to RTP orientation. Next, we slice the mesh with a 0,1mm. The planes intersecting the body contain countour. We use the library trimesh to calculate the length of the perimeter.

3. Experiments and Results

4. Conclusion

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