Thesis

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1 Method

1.1 Pose estimation - 2D

The pose estimation is built around the open source framework MMPose [**?**] and it uses the *Distribution-Aware coordinate Representation of Keypoint*, **DARK**, method [**?**] to extract the body joints from the images. The model used is trained on the **COCO** dataset [**?**]. In this data set the human body is represented by 17 joints which can be seen in Figure 1. In Figure 2 the estimated joints are shown together with joints measured by ... The difference in shoulder location in Figure 2 can be explained by the positions of the joints tracked, which is also illustrated in Figure 1. This is something that is also reflected in the difference between the measured and estimated knee positions, shown in Figure 3.

1.2 Pose estimation - 3D

- [**?**]. Results not good atm, model needs finetuning with our depth data if used, see Figures 4, 5.

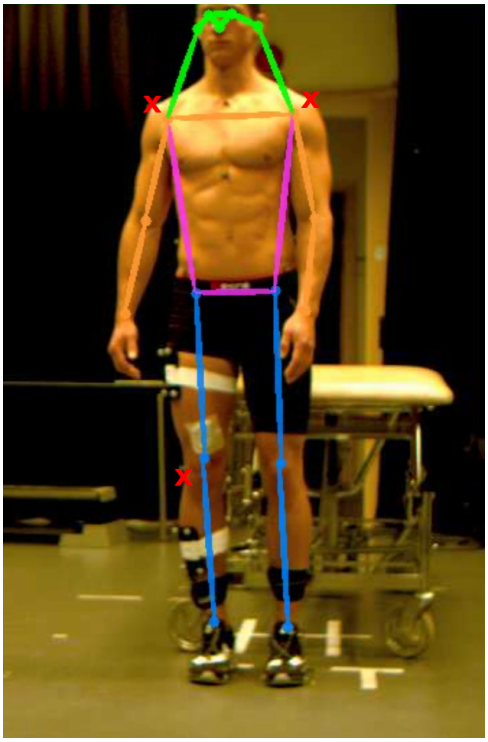

Figure 1: Body joints detected by model trained on the COCO data set. Red crosses indicate where measured joints that deviate from the estimated ones are situated.

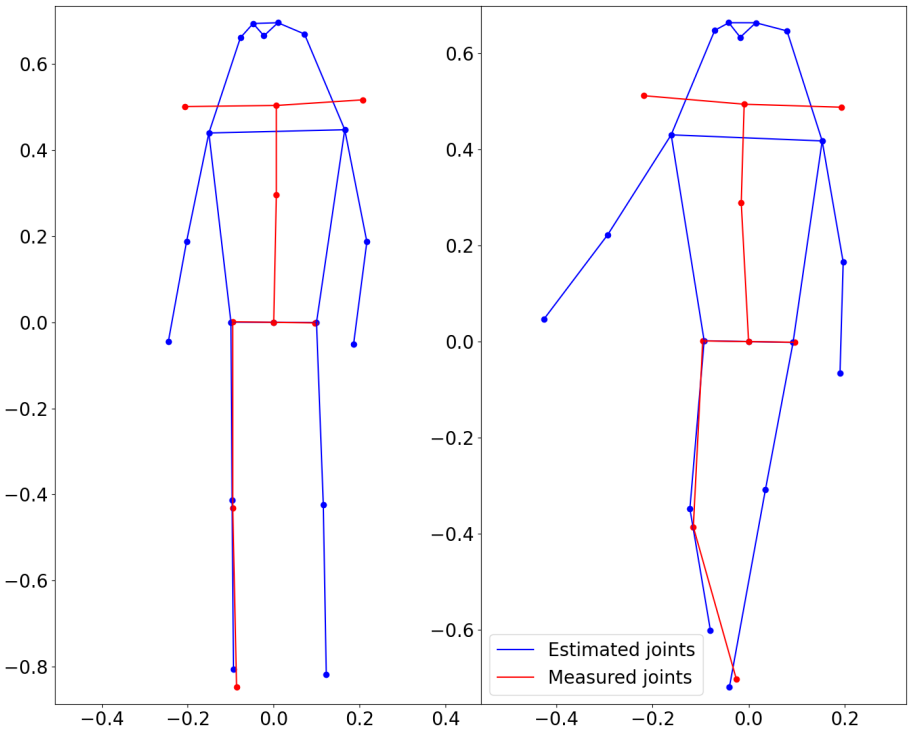

Figure 2: Estimated body joints together with measured joints for two frames in the video.

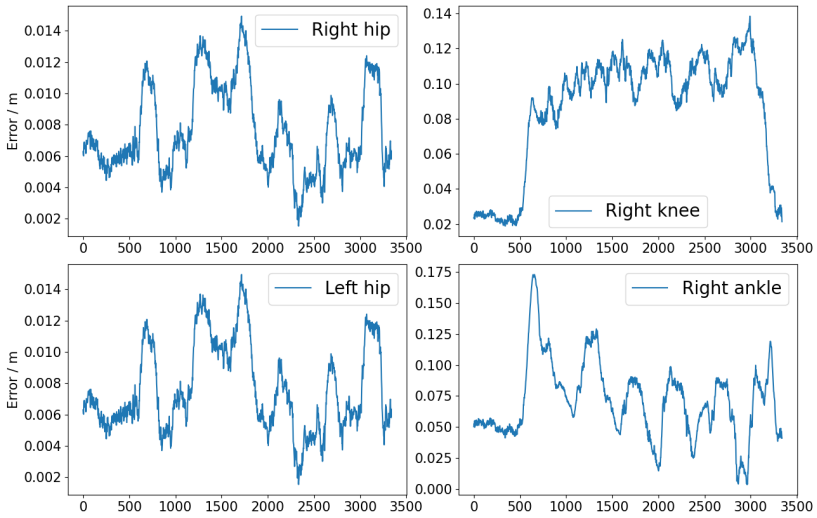

Figure 3: Euclidean distance between the measured and estimated joint positions.

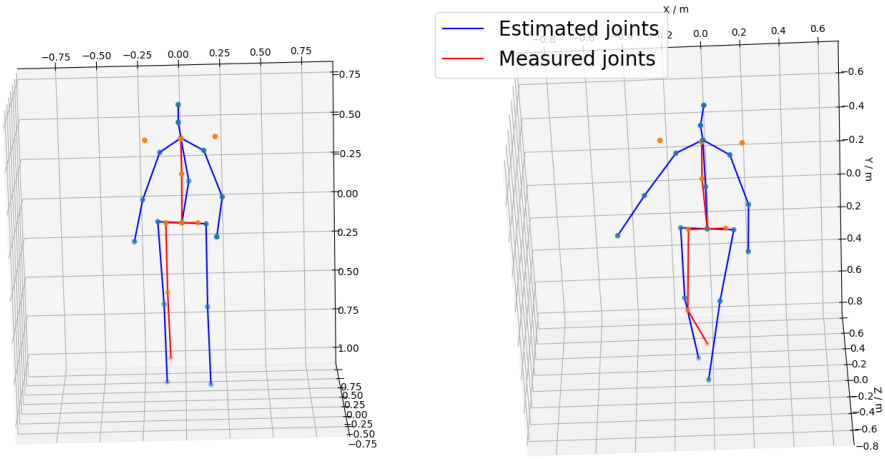

Figure 4: Estimated 3D body joints together with measured joints for the same two frames as in Figure 2.

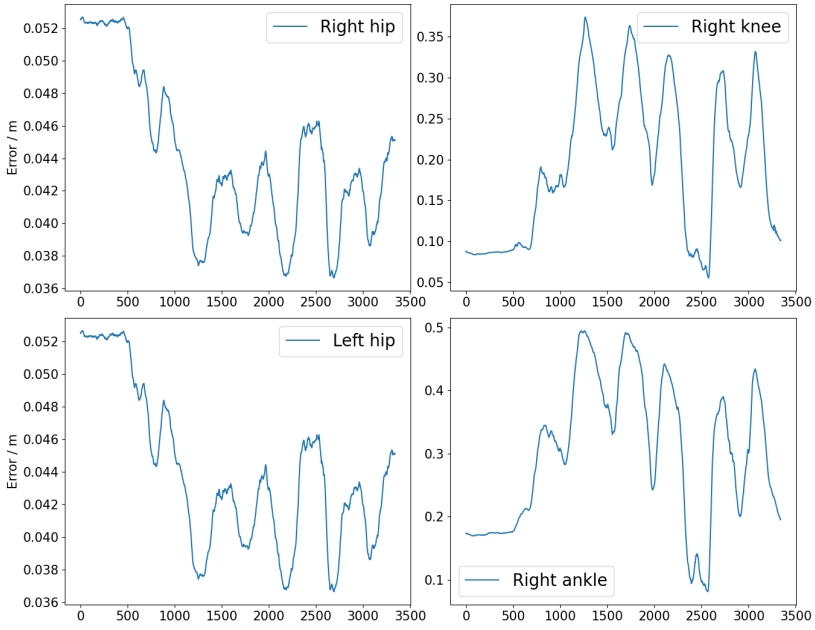

Figure 5: Euclidean distance between the measured and estimated 3D joint positions.