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Final Thesis

For

Selective Pose Estimation in videos

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Motion capture is a widely used technology in the games industry and movie industry to capture human movement. This allows animators to easily create life like human animations in their creations. Motion capture in these industries are done in specialized environments and with personal to operate and set the equipment. For beginner and independent animators this isn't very suitable solution to create their animations, such users either create their own animations from the beginning or find animations from the internet. But to Current portable solutions that allow to capture motion capture data uses either specialized suits or have to processed in a sepearte server.

A system that allows users to generate animations from videos with multiple people where the user can select which subjects animations to extract would drastically reduce the amount of time taken in the animation pipeline. The suggested prototype is made possible by the recent breakthroughs in deep learning and pose estimation. The system uses a state of the art human tracker to track the user selected subject in the video. Then a 2D pose estimator is used to inder the keypoints which are then sent to a 3d estimator to processed to generate the 3d keypoints. The newly generated keypoints are then processed in blender to generate an animation.

The identified requirements of the system were tested both functionally and non-functionally, with satisfactory performance. Domain specialists and technical experts evaluated the system, which assisted in identifying the system's strengths and disadvantages, as well as potential upgrades that are needed.

Keywords: Deep learning, Pose estimation, computer vision