3D human pose estimation in 2D video

Project Proposal

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Motivation：

3D human pose estimation is currently one of the most popular research fields in computer vision. The main aim is to estimate the position of human joint points from multiple RGB images of videos and then estimate the 3D joint points corresponding to the 2D key points. With enough 3D joint points, human motion can be reappeared. 3D human pose estimation can be used as the basis for tasks such as human pose recognition, behavior recognition, and human tracking.

Purpose：

Estimate 3D human joint points from 2D RGB image, and then plot the estimated human pose.

How the system will work and function：

1. **Extract 2D key points from RGB videos using detectron2.** Detectron2 from Facebook is very famous for 2D key point detection. Rather than train directly from RGB image, we would use detectron2 first to get 2D key points for training.
2. **Data Collection.** Collect a famous human motion dataset called Human3.6M.
3. **Model Training from 2D joint points to 3D joint points.** Using human 3.6M for data training, this process would be referred to other papers.
4. **Estimation.** Predict the human pose with arbitrary videos.

How many students included?

4,

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