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PROJECT GUIDE:

Ms. Padmavathi S.

Title:

Activity Recognition using gestures

Problem Statement:

To develop Articulated human body model by using the limbs and joints, and to track the human motion in a video sequence.

Zeroth review suggestions:

a) Background Subtraction :

Background Subtraction will not handle all the cases like

Adho Mukha Śvānāsana
Ardha Matsyendrāsana
Bharadvājāsana
Kukkuṭāsana

Because it involves overlapping of limbs and cannot be captured for creating articulated points.

b) Dataset:

Datasets for all asanas which are involved in case study has to be collected and analyzed for all given exception cases

c) Articulated points:

More articulated points have to be included in human body tracking to improve the real time tracking.

Our Findings:

a) Background Subtraction:

Background subtraction is a key problem in tracking. It needs to address various issues like changing light conditions, effects of moving elements in the background, objects that enter and leave the scene, etc.

The lighting of the background do not have considerable variations other than noise introduced by the electric lights used in the background.

. The background has no moving objects.

. The background does not occlude the foreground.

b) Dataset:

The important parameters of a link object are

- Link's starting position in the image
- Angle at which it is connected to other links
- Length of the link

Corrections undertaken:

a) We have the following assumptions.

* The person will not move back and forth.
* He will make only the movements specified in our gesture database.
* There won't be any occlusions.
* Since the experiment is performed in indoor environment we don't assume strong changes in the lighting.
* The person performs actions at normal speed. No rapid movements of arms that could not be caught by 60 fps camera.

b) We identify the gestures in a hierarchical way.

c) Any tracking is done with respect to the reference frame