1. ALGORITHM FOR HEAD MOVEMENT

In head movement detection, the video captured is first divided into frames. Frames are processed by converting to grey scale and detecting face. Shi Tomasi algorithm is implemented to find corners. This is to detect the corners of face to know how much as the head bent.

To know the movement of head in the consecutive frames Lucas Kanade Optical flow is used which assumes points or pixels nearby to have same flow. A finite while loop runs which takes each frame and detects the face and the co-ordinates (x, y) of the movement of head is found.

The centre of the face co-ordinates is found and the point is named as p0. Using Lucas Kanade Optical flow the movement of head is found and the point is named as p1. The distance between the points is found. A fixed threshold value is fixed in both the directions. If the movement of head is greater than the threshold value, head movement is detected.