

ABSTRACT

Rapid developments in the field of information technology brings impact to the life of all of us, one of them is Human Computer Interaction (HCI). Part of the human body can be captured and followed its movement using a sensor, such as a webcam. In this Final Task, the writer wanted to build an application that can capture and follow the movement of the hands which are named as hand tracking in which can be utilized for a variety of things later, such as computer pointer, game control tool, etc.

To support this Final Task, a method that can implement the real time hand tracking system is used, that method is active contour (snakes). Snakes algorithm works by minimize control points using internal energy and external energy so that control points are moving towards a features such as line and point in every iteration. Each frame will be done background subtraction process which color frame is RGB and hand segmentation which color frame is HSV before getting into the process of active contour. It aims to make the region of interest (ROI) of frame only hand object which that frame will be done active contour process. So when does the active contour process, control points are always moved to the side of the hand object.

Background and lighting factor affect the ability of background subtraction and skin detection to do its function perfectly. In indoor with simple background using lighting such as lamp is able to generate a good level of accuracy as big as 98%. Active contour very well used for hand tracking in this ideal environment.

Keyword : active contour (snakes), background subtraction, hand segmentation