Abstract

The computer industry is developing at a fast pace. With this development almost all of the fields under computers have advanced in the past couple of decades. But the same technology is being used for human computer interaction that was used in 1970’s. Even today the same type of keyboard and mouse is used for interacting with computer systems. With the recent boom in the mobile segment touchscreens have become popular for interaction with cell phones. But these touchscreens are rarely used on traditional systems. This paper tries to introduce methods for human computer interaction using the user’s hand which can be used both on traditional computer platforms as well as cell phones. The methods explain how the user’s detected hand can be used as input for applications and also explain applications that can take advantage of this type of interaction mechanism [1] [2].
Implementation of Hand Detection based Techniques for Human Computer Interaction

- O'reilly, Learning OpenCV, Computer Vision in C++ with the OpenCV Library, Adrian Kaebler and Gary Bradski.
- OpenCV usage documentation http://docs.opencv.org
- Thresholding http://www.cse.unr.edu/~bebis/CS791E/Notes/Thresholding.pdf
- Threshold Function using OpenCV http://docs.opencv.org/modules/imgproc/doc/miscellaneous_transformations.html
- Contours, Convex Hull and Convexity Defects http://docs.opencv.org/modules/imgproc/doc/structural_analysis_and_shape_descriptors.html

Index Terms

Computer Science  Artificial Intelligence

Keywords

OpenCV  Thresholding  Contour  Convex Hull  Convexity Defects  Gesture Controlled Robot

Pick and Place Robot

Finger Tracking

Hand Orientation