

Hand Gesture Segmentation and Gesture Recognition Based On Contour Model

[1] R.Keerthana,[2] S.Mythili

[1] PG Student, [2] Associate Professor

[1][2]ECE Department

[1][2]PSNA College of Engineering and Technology

Email:[1]keerthana.santhiraja@gmail.com , [2]smbme.psnacet@edu.in

ABSTRACT

In this proposed system, the hand gestures are segmented from their backgrounds using a new algorithm to increase the accuracy of the response of gestures. In this, the gesture recognition is based on the contour model. Hand gesture recognition plays vital role in human-computer interaction (HCI), because of its extensive applications in Real-Time, sign language recognition, and 3-D games. In this, the gestures are segmented from their backgrounds. After some pre-processing techniques applied to the segmented image, we will be getting the contour descriptors. In real-time application, the obtained contour descriptor will be matched with contour descriptor in the data base. Once it matched, then it will trigger an event to drive an application.

Index Terms-Human Computer Interface (HCI), Segmentation, Contour Descriptor.

1. INTRODUCTION

Gesture recognition is the mathematical interpretation of a human motion by a computing device. Gesture can be recognised in many ways. They are facial recognition, voice recognition, eye tracking and lip movement recognition are the elements referred as a perceptual user interface (PUI). The aim of PUI is to improve the efficiency and make it more easy to use. In many applications, gestures are used as input commands. Recognizing gestures, make computers to be more accessible for the physically-impaired and makes interaction between two persons. It is used in a gaming or 3-D environment. Many hand gesture recognition methods are based on the body of work related to body pose

estimation. The state-of-the-art of body estimation techniques began to make use of depth sensors to track human body parts. Exact shape of the hand Obtained led to good feature extraction and Fast and powerful results from the proposed algorithm.

2. LITERATURE REVIEW

[1] In this paper, the gestures are recognized by using accelerometer. It plays a vital role in human computer Interaction. In this, two approaches are introduced. They are nave Bayesian classification with feature separability weighting and dynamic time warping. Those approaches are based on algorithms. Finally, the results obtained from those approaches are compared for the outcome. The Bayesian classification accuracy is around 90%

[2]In this paper, training data collection and pose estimation are challenging tasks. It proposes a new technique for generating the real gesture data set. To do labeling process based on color, A 14 patch hand partition scheme is used. This method comes with vision based hand gesture recognition. It uses kinect sensor. Under constrained conditions, kinect sensor increases the accuracy. In this, A

contour model is proposed to improve the performance of the gesture matching process. It reduces the computational time.

[3]In this paper, the continuous gesture is recognized using hand gesture recognition system. It comprises four modules: a real time hand tracking and extraction, feature extraction, hidden Markov model (HMM) training, and gesture recognition. First step is real-time hand tracking and extraction to track the location of moving hand and extract it. For that, it uses the Fourier descriptor (FD).Many application of Fourier Descriptor is combining the spatial and temporal feature of the input image sequence as our feature vector. After the extracting process, HMM is applied to recognize the input gesture. This test involves 20 different gestures. The recognizing rate is around 92.5%.

[4] One of the important researches in the computer vision is scene classification. And it is a difficult task. Because, it faces many difficulties. A supreme approach is to recognize the scenes. The feature field and space field are combined using the Markov Random Field (MRF) when quantifying the image into a collection of unordered visual words. This process is based on the traditional Bag of Visual words (BOV) model. To know about

the topic distribution of scenes, A new model of the Latent Dirichlet Allocation (LDA) has been applied. Finally, A classifier is used to categorize an image. The data set is used for testing, contained 15 scenes. And the accuracy is around 93.7%.

[5]In the communication domain, the sign language plays a vital role for deaf and dumb people. So, In recent days the application of sign language becomes more important and it acts as a interface between two persons to convey their thoughts. Now-a-days many algorithms are designed to help people. But, still some good results exist. One of the difficult parts in the hand gesture recognition is segmentation of the hand. In this paper gives some possible ways for segmentation using RGB colour spaces and modules. It describes new algorithm which shows the highest accuracy. This will be continued with various or different gestures to obtain the results with accuracy. And the accuracy is around 95%.

3. CONCLUSION

In the above paper, a new algorithm is used to increase the efficiency and accuracy. This proposed paper uses the graph cut algorithm for

image segmentation. It will increase the accuracy. The accuracy is around 95%.

REFERENCES

- [1] jerald siby, hilwa kader and jinsha jose
“Hand Gesture Recognition (IJITR) international journal of innovative technology and research”
Volume No.3, Issue No.2, February – March 2015, 1946 – 1949.
- [2] 1. guangyu wen, 2. yan tang, 3mengdie wu, 4.zhixing huang
“Scene classification based on the contextual semantic information of image”
10th April 2013. Vol. 50 No.1
- [3] Feng-Sheng Chen, Chih-Ming Fu, Chung-Lin Huang
“Hand gesture recognition using a real-time tracking method and hidden Markov model”
Institute of Electrical Engineering, National Tsing Hua University, Hsin Chu 300, Taiwan, ROC Received 15 January 2001; received in revised form 2 January 2003; accepted 20 March 2003
- [4] david mace, wei gao and ayse k. coskun
“Accelerometer-Based Hand Gesture Recognition using Feature Weighted Naïve

Bayesian Classifiers and Dynamic Time
Warping”

IUI'13 Companion, March 19–22, 2013,
Santa Monica, CA, USA

[5] yuan yao, member, IEEE, and yun fu,
senior member IEEE.

“Contour Model-Based Hand-Gesture
Recognition Using the Kinect Sensor”

IEEE transactions on circuits and systems
for video technology, vol. 24, no. 11,
november 2014