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| **Title** | **COMPARATIVE STUDY OF HAND GESTURE RECOGNITION SYSTEM**  **(Natarajan Meghanathan, et al. (Eds): SIPM, FCST, ITCA, WSE, ACSIT, CS & IT 06, pp. 203–213, 2012.**  **DOI :10.5121/csit.2012.2320 )** |
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| **Description** | This paper is about modelling the hand for hand gesture recognition.It focuses on modelling of the hand in spatial domain, i.e; characteristics of a posture from an image. It uses various 2D and 3D geometric and non-geometric models such as volumetric model, deformable model, skeletal model, etc. The features extracted after hand modelling are colour and hue separation, palm location and hand centroid.  It has used Fuzzy c-Means clustering algorithm where input image is converted into HSV color space and segmented using thresholding technique. The system implemented using FCM resulted in recognition accuracy of 85.83% and recognition time 2-4 seconds.  It has also proposed to a system to recognize isolated and meaningful gestures for Arabic numbers (0 to 9) using Gaussian Mixture Model (GMM) and Hidden Markov Model (HMM). |
| **Conclusion** | This paper compares v the accuracy of recognition of spatial models by using the various combinations of Segmentation, Features representation, and Recognition techniques such as HSV colour space, HMM, GMM and FCM. |
| **Limitations** | 1.The main drawback of the system is it does not consider gesture recognition of temporal space, i.e; motion of gestures.  2.It uses images to classify the gesture and is not in real time.  3.It is unable to classify images with complex background i.e; where there are other objects in the scene with the hand objects .  4.The computation time to recognise a gesture is high (2-4 seconds).  5. Classification of same gesture in two different images with variation of hand position gives contradicting outputs. |