Unsupervised Image Segmentaion

S. Venkatesh and K. Radhika

Abstract - Literature reported that in image processing, Model-Based image segmentation plays a dominant role in image analysis and image retrieval. to analyze the features of the image, model based segmentation algorithm will be more efficient compared to nonparametric methods. In this paper, we propose unsupervised image segmentation using wavelets (UISWT) to make segmentation fast and simpler. the approximation band of image Discrete Wavelet Transform is considered for segmentation which contains significant information of the input image. The histogram based algorithm is used to obtain the number of regions and the initial parameters like mean, variance and mixing factor. The final parameters are obtained by using the expectation and maximization algorithm. The segmentation of the approximation coefficients is determined by maximum likelihood function. It is observed that the proposed method is computationally efficient allowing the segmentation of large images and performs much superior to the earlier image segmentation methods.