

Two Stage Unsupervised Segmentation of Color Images

Abstract In this paper, we present a novel image segmentation method, which is used in content-based image retrieval system. This method efficiently combines the local and global information to achieve unsupervised segmentation of color images and can divide images to meaningful regions. The method consists of two steps: coarse segmentation and fine segmentation. In the first step, a region growth algorithm based on the variation of edge's intensity is used to segment images locally. In the second step, the graph is constructed using the preliminary partition result and the weight of edges is calculated. Then we use graph theoretic framework of normalized cuts to find partitions of the image. Experiments show the effectiveness of this algorithm on real images.

Keywords Segmentation, Region growth, Normalized cut.