Abstract

This paper proposes an increased modularity created contour detection algorithm. Given an over segmented image that entails of many small regions, our algorithm automatically combines those neighboring regions that produce the largest increase in modularity index. When the modularity of the segmented image is increased, the method stops merging and produces the final segmented image. To preserve the repetitive patterns in a homogeneous region, we propose a feature on the basis of the histogram of states of image gradients and use it together with the color feature to characterize the similarity of two regions. By building the similarity matrix in an adaptive manner, the over segmentation problem can be successfully avoided.

References

1. S. Li and D. Oliver Wu “Modularity-Based Image Segmentation” IEEE Transactions on Circuits And Systems For Video Technology, Vol. 25, No. 4, April 2015


Index Terms

Computer Science Networks

Keywords

Clustering, community detection, image Contouring, modularity, contourdetection