Segmentation by Incremental Clustering

Abstract

A method for unsupervised segmentation by incremental clustering is introduced. Inspired by incremental approach and correlation clustering, clusters are added and refined during segmentation process. Correlation clustering is to keep away from pre-definition for number of clusters and incremental approach is to avoid re-clustering that is needed in iterative methods. The Gaussian spatial kernel is involved like a part of similarity function to cover local image structure. Cluster representative is updated efficiently to satisfy the old and new similarity constraints rather than re-clustering the entire image. Experimental results are discussed and show that the algorithm requires reasonable computational complexity while gaining a comparable or better segmentation quality than standard methods.

References

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