Convex Color Image Segmentation with Optimal transport Distances

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This work concerns the histogram-based segmentation of a color image in two regions. In the considered framework, fixed exemplar histograms define a prior on the statistical features of the two regions in competition. We investigate the use of regularized transport-based cost functions as discrepancy measures between color histograms and consider a spatial regularization of the segmentation map with total variation. We finally rely on a primal-dual algorithm to solve the obtained convex optimization problem. Experiments illustrate the robustness of the proposed method for the segmentation of natural color

References

[1] J. Rabin and N. Papadakis Convex color image segmentation with optimal transport distances. *In Scale Space and Variational Methods in Computer Vision*, 256–269, 2015.