Image Segmentation via (diffusion) Spectral Clustering

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Main objective: Implementation and evaluation of (diffuse) spectral clustering image segmentation algorithm.

Problem Statement:

- Fast and reliable image segmentation is a crucial building block of image recognition.
- Earlier work describes spectral clustering as a robust general-data segmentation method with promising results in the image segmentation area.
- This work uses mean-shift clustering instead of commonly used k-means clustering algorithm.

Conclusions:

- Quality of the segmentation depends on:
 - Algorithm parametrization
 - Input image complexity
 - Segments' shape
- Diffusion map based clustering reduces the over-segmentation problem.
- Algorithm's complexity may negatively overweights its qualities in some cases.



