List Of Papers

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1. Problem description: Spatiotemporal Video Segmentation

The dataset contains movie clips that contain static or moving objects. The movies were shot using a camera on a fixed tripod with no zooming events so we would assume that backgrounds are static.

My responsibility is to label each object that has appeared on the screen. In other words, identifying which pixels belong to the same object in the same frame across all frames.

Video tracking is not the right problem formulation here because we need the exact boundary of each object. On the other hand, ordinary video segmentation is not enough either because we need to know how each object moves in time. Therefore, we need spatiotemporal video segmentation, which provides us the exact boundary of each object in space and how each object moves in time.

These papers propose different approaches to solving the problem of spatiotemporal motion segmentation and two of which have been cited over 200 times.

2. Papers

1. Efficient Hierarchical Graph-Based Video Segmentation[1]
2. Image and Video Segmentation by Anisotropic Kernel Mean Shift[2]
3. Visual Attention Detection in Video Sequences Using Spatiotemporal Cues[3]

References

[1] Matthias Grundmann, Vivek Kwatra, Mei Han, and Irfan Essa. Efficient hierarchical graph based video segmentation. *IEEE CVPR*, 2010.

[2] JueWang, Bo Thiesson, Yingqing Xu, and Michael Cohen. Image and video segmentation by anisotropic kernel mean shift. In *Proceedings of European Conference on Computer Vision*, pages 238–249. Springer-Verlag, May 2004.

[3] Yun Zhai and Mubarak Shah. Visual attention detection in video sequences using spatiotemporal cues. In *Proceedings of the 14th Annual ACM International Conference on Multimedia*, MULTIMEDIA '06, pages 815–824, New York, NY, USA, 2006. ACM.