Video Image Segmentation with Graphical Models

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Video image segmentation plays an important role in video processing and computer vision. This talk gives a brief introduction to some popular segmentation approaches based on the graphical models. A successful deterministic method maps the image segmentation into a minimum graph cut problem. Stochastic approaches are mainly based on the Gibbs sampler. We adopt the Potts model with external fields and random walkers for the video object and facial feature segmentation. An incremental expectation-maximization algorithm is developed to estimate the parameters of the model. Experimental results show the graphical models are capable of image segmentation from live video.