

Some Submodular Function Optimization problems in Image Segmentation

李乔良
湖南师范大学

Submodular function optimization has been widely used in image segmentation. In this paper, we first survey the state of the art in this area. Then, we introduce a new submodular function for image segmentation. The function consists of three components: the mutual entropy part which measure the difference between different parts, entropy rate part which measures compact and homogeneous of the same parts and a new balancing function encourage the balance of different parts. We consider the optimization of this object function under the must link and cannot link constraint. We give an approximation algorithm to solve this new optimization problem. Experiments on the Berkeley segmentation data set reveals the performance of our new model over the state of the art.