

## Statistical and Learning Techniques in Computer Vision

### Homework 6: Due Monday, November 6, 2006

Here is a relatively short homework to help you investigate the ideas and the details of the Discriminative Random Fields paper.

1. **(15 points)** Prove that the basic formulation given in Section 3 can be optimized using a graph-cuts technique when  $K > 0.5$ .
2. **(15 points)** Derive the details of the pseudo-likelihoods learning technique for the MRF parameters.
3. **(20 points)** Look for a more recent paper that uses the DRF idea and briefly (one or, at most, two paragraphs) sketch the differences over the Kumar and Hebert paper. I am not expecting you to understand and evaluate all of the details of the paper.