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- Thursday, January 27, 2005
  Multiscale conditional random fields for image labelling

  We propose an approach to include contextual features for labeling images, in which each pixel is assigned to one of a finite set of labels. The features are incorporated into a probabilistic framework which combines the outputs of several components. Components differ in the information they encode. Some focus on the image-label mapping, while others focus solely on patterns within the label field. Components also differ in their scale, as some focus on fine-resolution patterns while others on coarser, more global structure. These components coalesce in a novel model architecture that allows the relevant patterns to be learned from labeled image data. We demonstrate performance on two real-world image databases and compare it to more standard approaches to this problem, a classifier and a Markov random field.

  Richard Zemel
  University of Toronto