Adaptive Image Segmentation Based on Histogram Transition Zone Analysis


Abstract

While segmenting “complex” images (with multiple objects, many details, etc.) we experienced a need to explore new ways for time-efficient and meaningful image segmentation. In this paper we propose a new technique for image segmentation which has only one variable for controlling the expected number of segments. The algorithm focuses on the treatment of pixels in transition zones between various label distributions. Results of the proposed algorithm (e.g. on the Berkeley image segmentation dataset) are comparable to those of GMM or HMM-EM segmentation, but are achieved with significantly reduced computation time.