



## **INTERACTIVE IMAGE SEGMENTATION AND OBJECT EXTRACTION USING PROBABILISTIC GRAPH**

Ashish Kumar, Uday Pratap Singh and Anoop Chaturvedi

### **Abstract**

We propose a Probabilistic Graph based Model for interactive image segmentation. A multilayer probabilistic Graph is constructed from an oversegmentation of the image to model the relationships among super pixel regions, edge segments and vertices. We used an iterative procedure to merge several regions based on the probability of the regions. Regions are merged until the user is satisfied with the segmentation. Each node's probability is updated after each iteration. With the help of proper user intervention the input image is segmented in short time period. We evaluate the proposed model on many images in the database. The results demonstrate that the Graphical model can be used for interactive image segmentation (IS). We compare our method with well known grabcut method of segmentation. The results also shows that the proposed method has good accuracy and efficiency for both segmenting the image and extraction of the object from the segmented image.

**Keywords and phrases:** Bayesian network (BN), graphical model, interactive image segmentation (IS), image segmentation, region merging.

