

IMAGE SEGMENTATION IMPLEMENTATION BY INTEGRATING COLOR EDGE EXTRACTION AND SEEDED REGION GROWING METHOD

Student Name : Seven Julianus Siregar
NRP : 5102 100 020
Department : Informatics, FTIf – ITS
Guidance Lecturer I : Prof. Dr. Ir. Handayani, M.Sc
Guidance Lecturer II : Nanik Suciati, S.Kom, M.Kom

Abstract

Image Segmentation Techniques consist of four main approaches, namely, threshold techniques, boundary-based methods, region-based methods, and hybrid techniques which combine boundary and region criteria.

In this final project, hybrid technique is done by integrating color edge extraction and seeded region growing. Color edge in an image are first obtained automatically by combining an improved edge detector and an entropic thresholding technique. After color edges are obtained, the centroids between these adjacent edge regions are taken as the initial seeds for seeded region growing (SRG). These seeds are then grown to be as large as possible according to its homogeneity criteria.

The experiments show that edge detection using Jianping Fan method is better than the others such as Sobel, Prewitt, Roberts and Laplacian of Gaussian (LoG) method. These experiments have been done for some testing images. And experiments of seeded region growing give good results too.

Key Words: *color edge detection, second-order neighborhood, entropic thresholding technique, automatic seed generation, seeded region growing.*