

Abstract

Level Set Method: An Application to Image Segmentation

Curtis Boodoo

This paper is about the use of the level Set Method in Active Contours without Edge Detectors in image segmentation and exploring the advantages and disadvantages of using Active Contours without Edge Detectors for image segmentation. The paper contains an introduction to the different methods used for front / interface propagation and an introduction and background into the level set method. A level set MATLAB toolbox developed by Dr. Ian Mitchell (Mitchell 2007) is used to explore the level set method with respect to propagating fronts in a normal direction and by convection. The level set toolbox was modified to perform image segmentation using Active Contours without Edge Detectors and used to explore the strengths and weaknesses of Active Contours without Edge Detectors method using images.

Keywords: Level sets, Image segmentation, Active contours without edges