

INVESTIGATING DEFORMABLE MODELS FOR MEDICAL IMAGE SEGMENTATION AND ANALYSIS

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Abstract

Deformable model is a promising and extensively used technique in medical image segmentation. Deformable models are effective in segmentation, matching and tracking various anatomic structures by exploiting constants derived from the image data together with a priori knowledge about the location, size and shape of these structures. Deformable models are capable of accommodating variations in biological structures over time and various individuals. This article discusses the rapidly expanding body of work on the development and application of deformable models to problems in medical image analysis mainly segmentation and other issues such as shape representation, matching and motion tracking. The various deformable model theory and the concepts and the mathematics involved in them are also discussed in detail.

Keywords: Deformable models, Active contour models, Snakes, Active shape model, Active appearance model, Medical image segmentation and analysis