

# Bayesian Pressure Snake for Weld Defect Detection

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**Abstract:** Image Segmentation plays a key role in automatic weld defect detection and classification in radiographic testing. Among the segmentation methods, boundary extraction based on deformable models is a powerful technique to describe the shape and then deduce after the analysis stage, the type of the defect under investigation. This paper describes a method for automatic estimation of the contours of weld defect in radiographic images. The method uses a statistical formulation of contour estimation by exploiting statistical pressure snake based on non-parametric modeling of the image. Here the edge energy is replaced by a region energy which is a function of statistical characteristics of a region of interest.

**Keywords :** Snake, images segmentation, pdf estimation, radiographic images, Non Destructive Inspection