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Unsupervised Algorithm for Radiographic Image Segmentation Based on the Gaussian Mixture Model

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Abstract : In this paper we study an unsupervised algorithm for radiographic image segmentation, based on the Gaussian mixture models (GMMs). Gaussian mixture models constitute a well-known type of probabilistic neural networks. One of their many successful applications is in image segmentation. Mixture model parameters have been trained using the expectation maximization (EM) algorithm. Numerical experiments using radiographic images illustrate the superior performance of EM method in term of segmentation accuracy compared to fuzzy c-means algorithm.

Keywords : weld defect, radiographic images, image segmentation, Gaussian mixture model, expectation maximization algorithm, fuzzy C-means algorithm