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Bayesian Networks-Based Defects ClassesDiscrimination in Weld Radiographic Images

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Abstract: Bayesian (also called Belief) Networks (BN) is a powerfulknowledge representation and reasoning mechanism. Based on probabilitytheory involving a graphical structure and random variables, BN iswidely used for classification tasks and in this paper, BN is used as aclass discrimination tool for a set of weld defects radiographic imagesusing suitable attributes based on invariant geometric descriptors. Testsare performed on a database of few hundred elements where the resultsare outstanding and very promising, since they outperform those givenby powerful SVM classifiers.

Keywords : Bayesian networks, weld defects, Geometric descriptors, radiography