MACHINE VISION BASED MISSING FASTENER DETECTION IN RAIL TRACK IMAGES USING SVM CLASSIFIER

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Abstract- Missing fastener detection is a critical task due to its similar characteristics with surrounding environments. In this paper, a machine vision based fully automatic detection and classification of missing fastener detection system is proposed using Support Vector Machine (SVM) classifier. This proposed system consists of preprocessing, transformation, feature extraction and classifications. Image resizing is performed as preprocessing step and Gabor transform is used as transformation technique. Grey Level Cooccurence Matrix (GLCM) features, Local Binary Pattern (LBP) features and Discrete Wavelet Transform (DWT) are used as features in this paper. SVM classifier is used as classifier in order to classify the test rail track image into either track image with fastener or track image without fastener.

Index terms*:* Fastener, classifier, features, track image, transformation.