

Automated identification of objects based on normalized cross-correlation and genetic algorithm

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<https://doi.org/10.1109/EHB.2015.7391457>

Abstract

The algorithms for the identification and classification of shape/object are widely used in applications for defects quality control up to complex security systems for persons detection, face recognition or even identification of individuals. The purpose of this paper is to find a solution to complete sorting of dangerous labeled packages with an automated method for identifying danger symbol. The pattern matching method with the normalized cross-correlation (NCC) for the identification and automat classification of tagged packages was implemented. The NCC is combined with genetic algorithm (GA) in order to improve performance of matching. The normalized correlation coefficient calculates the probable position of template in the scene image. The genetic algorithm calculates scaling and rotation of the pattern for another template matching in the scene image.