Inspection of Railway Track Fastening Elements Using Artificial Vision

Authors : Abdelkrim Belhaoua, Jean-Pierre Radoux

Abstract : In France, the railway network is one of the main transport infrastructures and is the second largest European network. Therefore, railway inspection is an important task in railway maintenance to ensure safety for passengers using significant means in personal and technical facilities. Artificial vision has recently been applied to several railway applications due to its potential to improve the efficiency and accuracy when analyzing large databases of acquired images. In this paper, we present a vision system able to detect fastening elements based on artificial vision approach. This system acquires railway images using a CCD camera installed under a control carriage. These images are stitched together before having processed. Experimental results are presented to show that the proposed method is robust for detection fasteners in a complex environment.