Some Studies on Surface Defect Detection using Deep Learning Algorithm

Mrs.S. Jeyamary, Assistant Professor (sps.jeya@gmail.com)

A R College of Engineering and Technology, Department of Electronics and Communication Engineering

ABSTRACT

This paper presents the development and application of image analysis and computer vision system in defect detection of ceramic tiles. Quality control is an important issue in the ceramic tile industry. For the ceramic tile industry maintaining quality is more important, bulk amount of ceramic tiles are manufactured; it is very difficult to monitor the quality of each and every tile manually. Lot of human resources is required for the defect detection of the tiles. The proposed method consists of two basic steps. The first step is pre-processing the image. Pre-processing operation consists of image acquisition, image enhancement, noise reduction, edge detection. In second step, we applied proposed flaw detection technique on tiles image to verify whether the tiles is faulty or not. In this study, we use deep learning CNN(Convolutional Neural Network) to detect tile defects from images taken from high-frequency and high-resolution cameras.

Keywords: Quality control, Image Acquistion, Image Enchancement, Noise Reduction, Edge Detection, CNN, Deep Learning