Detection and classification of steel defects using machine vision and SVM classifier

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Abstract : the importance of quality control of steel products is increasing day by day in the manufacturing industrial systems because it offers the possibility of knowing the state of the products without stopping the production line which allows the control of a defect before it becomes a complex problem and avoiding production losses. Human quality control of steel products remains tedious, fatiguing, bit fast, bit robust, dangerous or impossible, therefore the use of automated vision system can significantly improve the quality inspection process, because the machine vision technology can overcomes the majority of manual inspection problems cited above and provide an interesting solution especially, with the impressive increasing of computing power of today's computers and the good quality of images that offer the current cameras.The main objective of this research is to propose an efficient control system based on machine vision technology and SVM classifier to classify different types of steel defects.

Keywords : Defects steel, machine vision, pattern recognition, HOG, GLCM, SVM classifier