

DEFECT CLASSIFICATION IN SURFACE STRUCTURE OF STEELS USING DEEP LEARNING

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ABSTRACT

For manufacturing industries, quality is the main concern, and to inspect the materials at a very faster rate to meet the production demands. In manufacturing, quality can be defined as the fitness of the product to use and it is an essential parameter in manufacturing industries. In order to attain that quality in any product or service, all the processes involved in that should be monitored carefully. It can be further elaborated into controlling/inspecting the processes to meet the standard form and this process of controlling is called quality control or quality inspection. The purpose of this project is to build a model that will quickly identify the presence of defects in the steel surfaces. The proposed yolov3 detector model attempts to improve the accuracy of prediction by using labelled images and different learning rates which takes into account the interaction effect of different parameters. The major outcome of this project is to build a suitable model that will identify defects faster and effectively when compared to other methods. In the future, the models can be tried with different activation functions and well-defined images on other architectures which may aid in building a model with better accuracy.

KEYWORDS: *Yolov3, Labelled Images, Activation Functions.*

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