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Manual Welding Fault Detection Using Machine Learning

Manual Welding is an important manufacturing process in several industries such as marine, automotive and furniture among others. Despite the widespread welding, it still causes a significant percentage of rework in many companies, especially small to medium sized companies. The objective of this project is to develop an economic online monitoring method for detecting defective welds using machine learning techniques. This will be done by monitoring the current consumption and weld temperature during welding. Despite the limited sample size, results suggest that SVM provide a promising 93% accuracy in detecting surface defects. The proposed method was implemented at a small ornamental fabrication company and demonstrated economic feasibility.

Special/ Invited session

Classification

Mainly application

Keywords

Manual Welding; Machine learning; Fault Detection

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Track Classification: Machine Learning