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Smart Image Inspection using Defect-Removing Autoencoder

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Abstract

Visual inspection is a tedious but necessary job in industrial manufacturing to ensure high quality products. Anomaly detection for images is a topic of interest and research, though acquiring anomalous data is difficult due to scarcity and labelling. Therefore, unsupervised methods attract attention. This paper proposes an unsupervised method, Defect-Removing Autoencoder(DeRA), for anomaly detection using deep learning. The method illustrated to perform exceptionally in various industrial materials and outperformed the state-of-the-art unsupervised anomaly detection methods. Mean AUC is improved on 15 categories of practical applications in MVTEC AD from 84.2% to 97.0% compared with previous methods.

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