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## Vision-Based Associative Robotic Recognition of Working Status in Autonomous Manufacturing Environment

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### Abstract

Recognition of working status and resolving abnormal conditions during the manufacturing process commonly relies on human intervention to visually inspect and adjust, which is boring, repetitive and sometimes risky. In order to achieve completely autonomous manufacturing, a vision-based robotic associative working status recognition method is proposed. This study aims to recognize the working status of HAAS CNC machine in autonomous manufacturing environment using 'scene text recognition', in an effort to develop autonomous machine tending solution. The result of this study based on vision input processing and Convolutional Recurrent Neural Networks (CRNN) has a recognition accuracy of 97.3%, which is a good performance.

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