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Double-stage methodology for activity recognition in manual assembly

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Abstract

The analysis and evaluation of manual assembly processes is related to high efforts and expenditures. Traditionally, assessments use visual and empirical methods with a low level of digitalization. These are often not cost-covering for small production quantities. This paper presents an approach to recognize assembly steps from individually detected sensory events. The approach can be integrated in a system for automatic analysis of manual assembly processes and is applicable when little training data is available. It is based on a hidden Markov model and combined with a decision logic. The methodology is tested on an exemplary use case.

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