Towards Optimal Worker Assistance -- A Framework for Adaptive Selection and Presentation of Assembly Instructions

Abstract:
Traditional systems for digital assistance in manual assembly, e.g. optical displays at the work place, are inherently suboptimal for providing efficient and ergonomically feasible worker guidance. The display of sequential instructions does not offer an increase in productivity beyond a certain degree. Little situational support and the resulting deterministic guidance lead to a reduced acceptance by the worker. A solution to this discrepancy is seen in an adaptive and cognitive system for worker guidance. Information from an adaptive process model and findings from experiments about human cognition are facilitated to provide the worker with assistive information, adapted to the situation and cognitive state of the worker. I.