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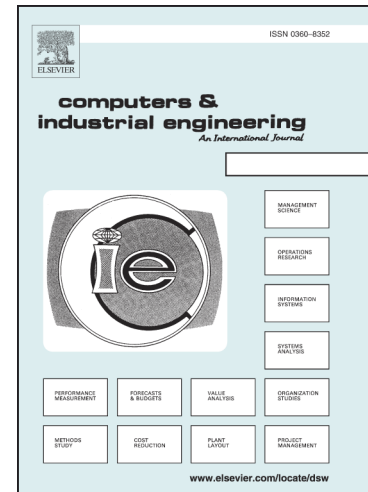
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Visual Management and Artificial Intelligence integrated in a new Fuzzy-based full body postural assessment

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Abstract

This study focuses on the problem of ergo-level evaluation for work tasks with a full-body postural approach. Although there has been much research in this area, including experimental investigations, there is still a need for objective and flexible approaches to the development of postural analysis. A new fuzzy-based full-body postural assessment tool is developed within a fuzzy inference engine (FIE). Starting from an ergonomic map, the study develops a Fuzzy knowledge-based system containing the main evaluation rules of the best known full-body evaluation checklists. The approach aims to give as its final result an integrated value of ergonomic assessment for all of the postures investigated, with the incidence of each posture. The methodology is applied to a real industrial case where manual tasks need to be performed to set up machines. A comparison is carried out with a standard integrated postural evaluation method on the same setup activity.

Keywords: Artificial intelligence, ergonomics, postural analysis, visual management, fuzzy sets, fuzzy inference engine

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