

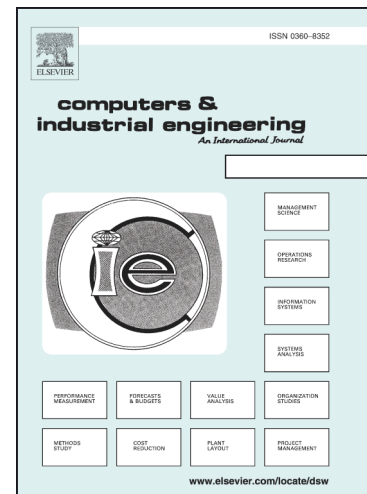
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Reducing physical ergonomic risks at assembly lines by line balancing and job rotation: A survey

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Abstract

Factors such as repetitiveness of work, required application of forces, handling of heavy loads, and awkward, static postures expose assembly line workers to risks of musculoskeletal disorders. As a rule, companies perform a post-hoc analysis of ergonomic risks and examine ways to modify workplaces with high ergonomic risks. However, it is possible to *lower* ergonomic risks by taking ergonomics aspects into account right from the planning stage. In this survey, we provide an overview of the existing optimization approaches to assembly line balancing and job rotation scheduling that consider physical ergonomic risks. We summarize major findings to provide helpful insights for practitioners and identify research directions.

Keywords: Ergonomics, Job rotation scheduling, Assembly line balancing, Survey

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