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A dynamic job rotation scheduling conceptual framework by a human representing digital twin

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Abstract

This work is an extension part of the Assembly Line Worker Assignment Balancing Problem(ALWABP), aims to provide a dynamic solution for an assembly line fatigue worker job rotation by using machine learning based digital twin. This framework explains; fatigue worker identification and work rotation possibilities for a reconfigurable assembly line. The fatigue causing parameters are sensed from the workers and classified with a fatigue classifier then send the fatigue worker details to a worker job rotation search algorithm. The job rotation search algorithm provides a suggestion to the production supervisor for a best possible worker job rotation/ reallocation solution dynamically.

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