Towards a digital twin of a production line for scheduled downtime reduction

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Résumé

In recent years, the manufacturing industry has witnessed a paradigm shift with the advent of digital twin technology, offering the promise of enhancing operational efficiency and real time data-driven decision making. In this context, this study explores the application of digital twin concept and technology to a production line in order minimize the total downtime of the line. The research methodology combines both literature analysis, modelling, simulation and real application in a manufacturing company that produces mechanical parts for the automotive industry. The main contribution is a digital model of the production line that allows to simulate in real time different strategies in order to minimize the total line downtime and, consequently, increase the overall production throughput.

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