
Production Bottleneck Resolution, Using Machine Learning for Throughput Enhancement

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Résumé

Increasing production throughput while maintaining the same quality and man-hours, allowing companies to enhance profitability or reduce final product prices, is crucial in competitive markets. Addressing production bottlenecks is among the most efficient strategies for improving throughput but presents numerous challenges during implementation. Many works in the literature aim to propose methods for tackling this issue at various stages, such as detection or prediction. However, only a limited number of papers delve into the practical application of these methods and the challenges faced by industry implementers. This paper focuses on the practical application and analysis of addressing bottleneck problems through a systematic approach. Firstly, comparing the requirements of existing bottleneck detection methods in the literature. Secondly, analysing a real case-study to define an approach to overcome bottleneck based on existing data. Finally, considering the primary objective of increasing production throughput in a big data environment, we propose to train machine learning models to predict bottlenecks and implement preventive actions in real-time data-driven situations.

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