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Explainable AI and Predictive Maintenance

Tuesday, 14 September 2021 16:00 (30 minutes)

Non-linear predictive machine learning models (such as deep learning) have emerged as a successful approach in many industrial applications, as the accuracy of predictions often surpasses classical statistical approaches in a significant, and also effective way. Predictive maintenance tasks (such as predicting change points or detecting anomalies) are particularly susceptible to this improvement. However, the ability to interpret the increase in accuracy isn't generally delivered alongside with the application of these models. In several manufacturing scenarios, however, a prescriptive solution is in high demand. The talk surveys several methods to render non-linear predictive models for time series data explainable and also introduces a new change point detection technique involving a Long Short Term Memory neural network. The focus on time series is due to the specific need of methods for this data type in manufacturing and therefore predictive maintenance scenarios.

Keywords

explainable AI, predictive maintenance, machine learning

Special/invited session

"Predictive Maintenance and Reliability" special session

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