

Improving Predictive Process Monitoring Using Object-Centric Process Mining

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Abstract

Real-life processes often exhibit object-centricity. When applying traditional predictive process monitoring to their event data, one needs to flatten them, introducing data quality issues. Object-centric predictive process monitoring prevents flattening and allows for new features and encodings traditionally not available. We present an experimental framework assessing the predictive improvements provided by object-centric process mining, broken down into the impact of flattening and the opportunities of object-centric innovations. This experimental framework is applied to a large-scale real-life Order-to-Cash (O2C) process. Our findings show a performance increase of 7% in remaining time prediction by employing graph neural networks and adding new object-centric features. We further investigate whether these improvements come from avoiding flattening or leveraging object-centric innovations. Our evaluation shows the positive influence of both factors on the results. These findings not only validate the significance of object-centric process mining can also be used to improve operational support in real-life processes.

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