Proactive business process mining for end-state prediction using trace features.

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Paper Title:	Proactive business process mining for end-state prediction using trace features.
Keywords Specific to the Paper:	Business processes, Process Mining Conformance Analysis Feature Engineering Process Prediction
Summary of the main contributions	This paper presents a new framework for predicting the future outcome of business processes by using trace features extracted through process mining techniques. The paper introduces an online process prediction framework that utilizes trace-level features for real-time outcome prediction. This framework aims to provide feedback for process improvement by analyzing and predicting the outcome of executing business processes. The paper extracts generic features from process logs using process mining techniques, including process discovery and conformance analysis. Graph-based features and conformance-related features are computed to characterize the behavior of executing process instances. Machine learning algorithms are then applied. The extracted features are utilized to train machine learning algorithms to predict the future outcome of business processes. Several well-known algorithms, such as Naive Bayes, Logistic Regression, Random Forest, and Support Vector Machine, are employed for this task. The paper presents experimental results that demonstrate the high accuracy, recall, and F-measure of the proposed framework. The proposed solution's reliability and effectiveness in predicting process outcomes is

	demonstrated through comparative analysis with existing techniques. A real-world case study involving the Customer Diagnostic Process (CDP) at BT, one of the UK's largest telecommunications firms, is used to apply the proposed framework. The framework is tested using a dataset of completed cases, and the prediction results are evaluated at different stages of the process.
Supported by a software application? (If yes, provide more details)	The paper proposes a framework that can be implemented as a software application for real-time monitoring and prediction of business process outcomes. The application would use process mining techniques to extract trace features from event logs and machine learning algorithms for predictive modeling. Furthermore, the application could provide interactive visualization of process insights and feedback for process improvement.