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This paper provides a comprehensive overview of Interpretable Artificial Intelligence (AI) for process mining, focusing on the development of a novel native interpretation approach for predictive process monitoring. It introduces a conceptual framework for developing explanations, emphasizing the importance of model transparency and interpretability. The paper demonstrates the application of the framework through local post-hoc explanation techniques for deep learning predictive models, showing its promise in providing simple, easy-to-understand rules to justify individual predictions.

In addition, the paper delves into the integration of artificial intelligence techniques such as machine learning and deep learning to enhance business process mining. It categorizes intelligent process mining techniques into descriptive, diagnostic, predictive, prescriptive, and cognitive mining, highlighting their potential for identifying patterns, analyzing anomalies, predicting future outcomes, recommending actions, and continuously improving business processes.

Furthermore, the paper explores a hybrid approach to learn accurate and interpretable business process simulation models by combining data-driven simulations based on process mining techniques with deep learning models. It also discusses the integration of Robotic Process Automation (RPA) with Artificial Intelligence (AI) techniques, emphasizing the potential for improving the productivity, quality, and intelligence of industrial and business processes in the context of Industry 4.0.

Overall, it highlights the importance of interpretability in realizing the cross-domain potential of AI and provides a roadmap for using AI to enhance process anomaly detection, next-event prediction, recommendation generation, and process optimization. It also highlights the need for further research to leverage AI to advance interpretable and optimized process mining that can provide significant benefits to organizations.