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Various methodologies and techniques are covered, aimed at improving business processes through the integration of artificial intelligence (AI) across different aspects:

PrBPM: A prescriptive business process monitoring technique suggests next best actions and optimizes KPIs while maintaining process control-flow adherence. Challenges include optimizing KPIs and minimizing deviation from the ground truth process. Future research recommendations include exploring advanced DNN architectures and incorporating multiple KPIs for stronger recommendations.

GANs for Predictive Monitoring: Generative Adversarial Nets (GANs) improve predictive process monitoring and next event prediction by identifying important labels and timestamps. Better experimentation and analysis are needed to validate the approach and explore alternative architectures.

Small Dataset Evaluation Framework: A framework evaluates predictive process monitoring methodologies for small datasets, emphasizing the importance of data quantity and complexity. It highlights the need for innovative strategies to handle rare trace variants.

LORELEY for Explainability: LORELEY generates counterfactual explanations for predictive process monitoring models, improving transparency and reliability. More precise evaluation from diverse datasets is recommended to understand LORELEY's performance better.

Activity Location Interpretability: Methods are proposed to improve interpretability in predictive process monitoring models, focusing on often overlooked activity locations. Future research should explore sophisticated analysis approaches and consider activity order within each group.

BAM Framework: A sophisticated Business Activity Monitoring (BAM) framework mixes Event-Driven Architecture (EDA) with semantic technologies, improving organizational efficiency and agility.

ProcessTransformer Model: ProcessTransformer, a novel model for predictive process monitoring using event logs, captures long-range dependencies and shows high accuracy in next activity prediction.

AI's Impact on BPM: The transformative impact of AI, particularly machine learning (ML) and deep learning (DL), on Business Process Management (BPM) is explored, offering descriptive, diagnostic, predictive, prescriptive, and cognitive analyses of event logs.

Forecast Reliability Assessment: The study focuses on predictive monitoring for enhancing business processes, insisting on the assessment of forecast reliability to enable proactive adjustments.

Intelligent Decision Support Systems: Operators face complexities in monitoring and controlling large-scale processes, highlighting the need for intelligent decision support systems incorporating AI and non-AI techniques.

Knowledge-Based Approach: The knowledge-based approach leverages AI technologies for monitoring, control, and diagnosis of industrial processes, improving collaboration between diverse methodologies.

AI's Impact and Policies: AI's impact on productivity and its potential in numerous sectors are discussed, highlighting the need for balanced policies to maximize benefits while addressing security, privacy, and ethical concerns.

Initiatives and Case Studies: Initiatives like 'The AI Alliance' and case studies demonstrate AI's transformative impact in practical applications, highlighting the importance of integration in new ways of working and promoting a culture of innovation.

AI-Based Methods in BPM: A review on AI-based methods for business processes provides insights into various techniques and their practical implications, emphasizing the alignment of IT with business fields for process automation.

ProcessGPT for Decision-Making: The exploration of ProcessGPT clarifies its transformative potential in reshaping business operations, particularly in BPM, by automating tasks, improving efficiency, and aiding decision-making in data-centric processes.