


# Artificial Intelligence Meets Business Process Management: Challenges, Opportunities, and Applications

Artem Polyvyanyy 

The University of Melbourne, Parkville, VIC, 3010, Australia  
artem.polyvyanyy@unimelb.edu.au

**Abstract.** In the past couple of centuries, humankind has achieved a significant improvement in the quality of life of the world's population, in large due to important advancements in the automation of wealth-generating activities. Business Process Management (BPM) studies concepts, methods, techniques, and tools that support and improve the way business processes are designed, performed, and analyzed in organizations, including workflow automation and control of business processes and decision-making practices. Artificial Intelligence (AI), in turn, strives to automate natural intelligence exhibited by humans, including the perception of the environment, taken decisions and actions, and learning and problem-solving. In this keynote, the discussion investigates how results in BPM inform and improve solutions to the problems addressed in AI, and vice versa. To exemplify potential synergies of the two fields, the keynote presents two concrete projects in the intersection of BPM and AI that Dr. Polyvyanyy works on together with his colleagues and Ph.D. students, namely applying the ideas from Process Mining, the subarea of BPM, to tackle the problems of Robotic Process Automation [1] and Goal Recognition [2] studied in AI. The screencast of the keynote is publicly available.<sup>1</sup>

## References

1. Leno, V., Polyvyanyy, A., Dumas, M., La Rosa, M., Maggi, F.M.: Robotic process mining: Vision and challenges. *Business & Information Systems Engineering* (mar 2020). <https://doi.org/10.1007/s12599-020-00641-4>
2. Polyvyanyy, A., Su, Z., Lipovetzky, N., Sardiña, S.: Goal recognition using off-the-shelf process mining techniques. In: *Proceedings of the 19th International Conference on Autonomous Agents and Multiagent Systems, AAMAS'20, Auckland, New Zealand, May 9–13, 2020*. pp. 1072–1080. International Foundation for Autonomous Agents and Multiagent Systems (2020), <https://dl.acm.org/doi/abs/10.5555/3398761.3398886>

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<sup>1</sup> <https://youtu.be/vIFTgrnj468>



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**Author/s:**

Polyvyanyy, A

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