An investigative study on the usability of Machine Learning and Artificial Intelligence on Business Processes*

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Abstract

Business process modeling (BPM) [3] is the task that needs to be executed for efficiently running business operations. Nowadays, Machine Learning (ML) [2] is enabling companies to expand their growth and optimize their processes using different approaches, as well as the size of stored data in Information systems (IS) is really increasing, to face this phenomenon we need to use smart techniques to control BP [6] activities.

This study aims to review the available literature on the use of ML for BP. The review investigates available, approaches, technologies, and machine-learning tools [5] in the BP domain. The study covers a huge number of articles, and research papers published last recent years [4]. The results indicate that the use of ML methods in BP supports decision-making by generating and analyzing relevant data in a good way, as well as BP re-engineering [1], the plurality of the suggested approaches and algorithms have displayed their limits which helped us to use other

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approaches based on the qualitative, quantitative overview methods. With ML algorithms such as decision trees and neural networks, we can help managers and business owners to solve problems they face when describing properties for specific data-sets to get the expected output. Also, AI-based decision-theoretic models can assist managers to make decisions within a BP. It is about minimizing the possibilities of the risk and guiding corrective actions and updates of its running. We will focus well in this paper on the approach of applied ML on some models because of its flexibility with this kind of approach.

Our work offers the opportunity to conceptualize future research directions that take into account the most recent problem areas as e.g. XAI (eXplainable Artificial Intelligence), i.e. issues in explainability and interpretability of results that were produced by data analytics (ML, Artificial Intelligence(AI)). A research program is defined to apply ML, DS, AI (ML, Data Science, and AI) to support decision-making in an enterprise environment.

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