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Concept Drifts Detection and Localisation in Process Mining

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Abstract : Process mining provides methods and techniques for analyzing event logs recorded in modern information systems that support real-world operations. While analyzing an event-log, state-of-the-art techniques available in process mining believe that the operational process as a static entity (stationary). This is not often the case due to the possibility of occurrence of a phenomenon called concept drift. During the period of execution, the process can experience concept drift and can evolve with respect to any of its associated perspectives exhibiting various patterns-of-change with a different pace. Work presented in this paper discusses the main aspects to consider while addressing concept drift phenomenon and proposes a method for detecting and localizing the sudden concept drifts in control-flow perspective of the process by using features extracted by processing the traces in the process log. Our experimental results are promising in the direction of efficiently detecting and localizing concept drift in the context of process mining research discipline.

Keywords : abrupt drift, concept drift, sudden drift, control-flow perspective, detection and localization, process mining
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