PhD Defense: 'Remaining Time Estimation in Business Processes Using Traces' Structural Information'

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Lugar: Microsoft Teams

Poñente(s): Ahmad Abdel Karim Ali Aburomman (أحمد أبورمان) (CiTIUS predoctoral researcher)

Idioma: Inglés

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This dissertation focuses on how to improve the accuracy of prediction the remaining time of a business process. We propose an Extended Annotated Transition System (EATS) model which extends the classical Annotated Transition System (ATS) by the following strategies:

1. including eight structural features of the traces.
2. annotating each state in the EATS with a partitioned list of values of these features (attributes). Linear regression is applied to each partition, thus producing more accurate remaining time estimations. In addition, attribute selection techniques are used for reducing the computational load of the model, thus addressing it scalability.

Validation of our model with ten real-life datasets shows that it, in general, it outperforms the other non-ATS, ATS and Deep Learning models described in the literature. Our basic model performs better than baseline work in 93.3% of cases for the three error metrics considered. Our partitioned model performs better than baseline work and all the models in a very recent survey. Our model including attribute selection performs better than the baseline work in the three error metrics in 96.8% of cases.

Supervisors: Alberto Bugarín Diz and Manuel Lama Penín

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