

Master Thesis

Business Process Conformance Checking with Large Language Models

Within the large field of Process Mining, conformance checking plays an important role. Conformance checking reveals process executions deviating from their expected behavior described by process models. Many conformance checking techniques are described in the literature (e.g., [1]).

Recently, large language models (LLM) were introduced into the field of process mining (e.g., [2]), but, to the best of our knowledge, have not been used for conformance checking yet.

The objective of this thesis is to test different representations of processes to be fed to LLMs, to experiment with different prompts and vector databases (Retrieval Augmented Generation), and to evaluate the results, comparing to the more established techniques.

Contact

Every thesis starts with an exposé, where you shape the topic towards your interest (in consultation with us). If you're interested, please contact us as outlined at <https://www.cs.cit.tum.de/en/isdo/teaching/theses/>.

[1]: Carmona, J. et al. "Conformance Checking: Foundations, Milestones and Challenges". Lecture Notes in Business Information Processing, vol. 448 (2022)

[2]: Jessen, U. et al. "Chit-Chat or Deep Talk: Prompt Engineering for Process Mining". <https://arxiv.org/pdf/2307.09909.pdf>