Thesis Project Proposal Draft

# Project Title Alternatives

1. Finding the minimum edit to change the outcome of a process.
2. Finding minimally changed traces to generate counter-factual examples that change the outcome of a process.
3. Minimum edit traces….
4. **Interpretable counterfactual examples by finding minimal edit sequences using event data in complex processes**

# Project Problem

Many processes, often medical, economical, or administrative in nature, are governed by sequential events and their contextual environment. Many of these events and their order of appearance play a crucial part in the determination of every possible outcome. Research in the Process Mining discipline has shown that is possible to predict the outcome of a particular process fairly, well. However, in many cases we not only aim to predict the outcome of a scenario, but rather aim to change it to a different one. An additional challenge is to change the trajectory of the process with as little interventions as possible. Hence, we want to minimally edit a process to understand the changes necessary to achieve an alternative outcome.

# Project Aims

Research disciplines like eXplainable AI and causal inference provide tools that may allow to investigate and predict counter-factual process outcomes. For this purpose, the thesis will investigate methods to generate counterfactual explanations for sequence models and their efficacy for real-world scenarios.