Master Project: an Approximate Inductive Miner

Inductive Miner is one of the most-used process discovery techniques. It finds a process model by identifying the most important behaviour in the event log (such as sequence, exclusive choice, concurrency or loop), splitting the log accordingly and recursing on these sub-logs. In several versions of Inductive Miner, different procedures to find the most important behaviour have been proposed. One such versions is fast, but quite strict, and gives up when it faces unstructured behaviour. Another such version will always persist, but is too slow to be used in practice.

In this project, we aim to get the best of both worlds: rather than aiming to find the most important behaviour perfectly, we settle for an approximate solution. The aim is to develop a new version of Inductive Miner that uses new strategies to identify the most important behaviour in event logs, and do that fast.

About the BPM group

The Business Process Management: Foundations and Engineering group is a new group in the Informatik i9 chair. The focus of the BPM group, led by Prof. Sander Leemans, is on the combination of data-based process analysis and the optimisation of processes in organisations.

About Celonis

Celonis is the global leading process mining software company and one of the world's fastest-growing SaaS firms. Celonis believes that every company can unlock its full execution capacity - and for that, they need you to join them as a Master Thesis Working Student.

Pre-requisites

In this project, you will develop your skills in several fields: process mining, formal reasoning and programming. Therefore, we ask that you demonstrably have experience in process mining and formal reasoning. Furthermore, you are/have:

- Master student of computer science or a comparable program
- Experience with Python, C++ or Java
- Interest in developing research prototypes in order to conduct large-scale experiments
- Strong communication skills and interest in presenting and testing your ideas
- Good knowledge of spoken and written English
- At least 3-6 months of part-time availability

What you'll do

- Familiarise yourself with relevant research approaches in the field of process mining
- Develop and implement new, innovative research prototypes for process discovery
- Collaborate with various teams at RWTH and Celonis to drive innovation in the field of process mining
- Make successful prototypes production-ready, in collaboration with experienced developers

What we offer

- you will be employed as a working student at Celonis
- you will get access to Celonis offices in Aachen and Munich
- you will be provided with a Celonis laptop during your employment as well as with access to all Celonis systems
- you will be onboarded like every Celonis employee and be trained within the Celonis Software and Academy

How to apply

Please send your CV as well as at-most 1-page A4 application including your motivation to pursue this opportunity. Please also indicate your prior experience with process mining, including relevant courses and your transcript of results. To apply, send your application before 1 November 2022 to applications@bpm.rwth-aachen.de.