Master Project
Batching in Process Mining

In process mining, typically we consider cases in isolation, as process models describe which steps can be executed for each case individually, and conformance checking techniques identify deviations between a model and a trace, in isolation. Sometimes, resources are considered: in the usually assumed BPM semantics, a piece of work that is ready to be performed must wait for a resource to become available. However, human resources that need to switch tasks incur some time to perform this switch, and thus often work is batched. That is, the same type of work is performed for several cases in a chained fashion: batching.

In this project, we will add another layer of realism to the way resources work by explicitly considering batching. We will develop the initial ideas to model batching in process models, how resources decide what to batch and what not. Furthermore, we will develop techniques to discover batching in event logs and/or corresponding conformance checking techniques.

About the BPM group
The Business Process Management: Foundations and Engineering group is a new group in the Informatik faculty. 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.

Pre-requisites
To apply for this project, you must demonstrably have experience with process mining. For instance, you have followed Fundamentals of Business Process Management, Introduction to Data Science, Business Process Intelligence or Advanced Process Mining. Preferably, you have done your seminar in the BPM or PADS groups. Furthermore, you are/have:

- Master student of computer science or a comparable program
- 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 (object-centric) 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
Celonis will hire the successful candidate as a Working Student:
- 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 in the Celonis Software Academy

How to apply
Please send your CV as well as an 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 to applications@bpm.rwth-aachen.de before 15 November 2023.