

# Brainstorm Seminar Stochastic Process Mining

Program

9-10 September 2023



An initiative of the scientific research community on process mining



**KU LEUVEN**



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## About the seminar

With the increasing amounts of data we see a rise in data uncertainty, due to varying sources and quality issues. In order to analyze and reason over data within the context of uncertainty, this uncertainty needs to be captured in data models, e.g. by means of probabilistic terms. Therefore process mining needs to consider uncertainty when analyzing logs and data likelihood when learning process models. Analyses, predictions and recommendations should be enriched with stochastic perspective.

In this workshop we aim at bringing together researchers that are interested in stochastic process mining. We are interested in identifying the basic challenges which probabilistic process data brings along and seek for new directions and methods to tackle these challenges.

We seek fresh thinking on analysis, prediction, and recommendation in the context of stochastic process mining, explicitly considering the likelihood of behavior in event logs, process models and languages.

The brainstorm seminar will be organized as a satellite event of BPM'2023 in the center of Utrecht on September 9-10, 2023.

## Organization

This Brainstorm Seminar on Conformance Checking Metrics is the third seminar organized by the Scientific Research Community on Process Mining. The scientific research community on process mining is a Flemish initiative, led by Hasselt University, together with Ghent University and KULeuven and various international partners from other universities.

Supported by the Flemish (Belgium) research foundation, this community exchanges research ideas and aspires synergetic research collaborations all over the world. The focus of the community's research efforts is to close the gap between scientific research on process mining techniques on one hand and the usability of these techniques on the other hand. More specifically, we will address three challenges:

Challenge #1 – Evaluation of Process Mining Algorithms

Challenge #2 – Predictive and Prescriptive Process Mining Algorithms

Challenge #3 – Event Data and Behavioral Analytics

## Contact

This seminar is organized and chaired by Sander Leemans, Avigdor Gal and Benoît Depaire. In case of any issue during the seminar, don't hesitate to reach out to the seminar's organizers

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**Prof. dr. Avigdor Gal**  
Technion, Haifa, Israel  
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**Prof. dr. Benoît Depaire**  
Hasselt University, Belgium  
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## Attendees

Name	Institution
David Chapela	University of Tartu, Estonia
Izack Cohen	Bar-Ilan University, Israel
Massimiliano de Leoni	University of Padua, Italy
Benoît Depaire	Hasselt University, Belgium
Stephan A. Fahrenkrog-Petersen	Humboldt-Universität zu Berlin, Germany
Avigdor Gal	Technion, Israel
Sander Leemans	RWTH Aachen, Germany
Henrik Leopold	Kühne Logistics University, Germany
Orlenys López Pintado	University of Tartu, Estonia
Xixi Lu	Utrecht University, the Netherlands
Fabrizio Maggi	Free University of Bozen-Bolzano, Italy
Marco Montali	Free University of Bozen-Bolzano, Italy
Marco Pegoraro	RWTH Aachen, Germany
Andrei Tour	The University of Melbourne, Australia
Jan-Martijn van der Werf	Utrecht University, the Netherlands
Matthias Weidlich	Humboldt-Universität zu Berlin, Germany

# Program Overview

Saturday September 9<sup>th</sup>, 2023

9:00	Arrival
9:15	Opening and introduction
9:30	5 minute talks
9:45	
10:00	
10:15	
10:30	Coffee break
10:45	5 minute talks
11:00	
11:15	
11:30	
11:45	Topic identification
12:00	
12:15	Lunchbreak
12:30	
12:45	
13:00	
13:15	
13:30	Brainstorm Workshop 1
13:45	
14:00	
14:15	
14:30	
14:45	Coffee Break
15:00	
15:15	Brainstorm Workshop 2
15:30	
15:45	
16:00	
16:15	
16:30	Dinner
16:45	
17:00	
...	
19:00	Dinner
...	

## Sunday September 10<sup>th</sup>, 2023

9:00	Arrival
9:15	Brainstorm Workshop 3
9:30	
9:45	
10:00	
10:15	Coffee break
10:30	
10:45	Prepare Presentations
11:00	
11:15	
11:30	
11:45	
12:00	
12:15	Lunchbreak
12:30	
12:45	
13:00	
13:15	Topic Presentation and Discussion
13:30	
13:45	
14:00	
14:15	
14:30	
14:45	Coffee Break
15:00	
15:15	Topic Presentation and Discussion
15:30	
15:45	
16:00	
16:15	Closing
16:30	
16:45	

# Program details

## General

The goal of this seminar is to facilitate an extensive brainstorm on various topics related to stochastic process mining. In order to maximize the output of the weekend, we have designed a minimal structure for the organization.

Prior to the seminar, all participants were asked to submit their input to the discussion by identifying potential challenges, benefits and use cases for stochastic process mining. This will act as the starting point of the weekend.

The seminar itself will require active participation by all participants and will provide plenty of time for brainstorming and discussion.

## Saturday September 9<sup>th</sup>, 2023

### 09:00 – 09:15: Arrival

Please try to arrive on time, so you have plenty of time to catch up with long lost friends.

### 09:15 – 09:30: Opening

Opening remarks by the organizers

### 09:30 – 10:30: 5-minute talks

Every participant is invited to discuss their submitted slide with challenges, benefits and use cases for stochastic process mining in 5 minutes. The idea is to share and clarify our views with respect to the state of stochastic process mining. During these presentations, everyone can ask questions for clarification purposes and we will keep track of all the ideas that have been introduced to identify the central brainstorm topics for the remainder of the weekend.

### 10:30 – 11:00: Coffee Break

Let's recharge with some caffeinated drinks.

### 11:00 – 12:00: 5-minute talks

Similar to the first 5-minute talk session.

### 12:00 – 12:30: Topic Identification

Based on all the collected input during the 5-minute talks, we will next identify the central topics related to stochastic process mining that deserve further brainstorming. Once identified, we will allow the participants to vote for the topics they prefer to be involved in during the brainstorm workshops. Based on these votes, the organizers will divide the participants into groups and assign topics.

### 12:30 – 13:30: Lunch Break

Let's enjoy a nice lunch together.

### 13:30 – 15:00: Brainstorm Workshop 1

During the brainstorm workshops, the participants are divided into groups and each group gets a topic assigned. Each group will brainstorm on the topic, supported by a provided template. The template will provide guidance on what aspects of the topic one can brainstorm on. This template is not exhaustive though. Each group should make sure however that the ideas that are revealed during the brainstorm are written down in the template, such that we can keep record of the work that has been done for future purposes.

### 15:00 – 15:30: Coffee Break

Time for coffee and other beverages.

### 15:30 – 17:00: Brainstorm Workshop 2

Similar to Brainstorm Workshop 1, but with different groups and other topics assigned.

### 19:00 – ...: Dinner

After a hard day of work, we will join together for a well-deserved dinner at Restaurant Wilhelminapark, located at Wilhelminapark 65 in Utrecht

## Sunday September 10<sup>th</sup>, 2023

### 09:00 – 09:15: Arrival

Please try to arrive on time, so you can share all your crazy stories of the night before.

### 09:15 – 10:30: Brainstorm Workshop 3

Our third and final brainstorm workshop, with new groups and topics. Do note that this workshop is 15 minutes shorter, but we should have gained efficiency by now.

### 10:30 – 11:00: Coffee Break

Let's take a break.

### 11:00 – 12:30: Prepare Presentations

With various topics on stochastic process mining discussed, it's time to consolidate what we have unraveled. People are assigned once again to specific groups and the purpose is to prepare some slide decks on the various topics that have been discussed. These slide decks will be presented in the afternoon such that all ideas can be shared in a structured manner to all participants.

### 12:30 – 13:30: Lunch Break

Let's enjoy a nice lunch together before we dive into the presentations.

### 13:30 – 15:00: Topic Presentation and Discussion

After all the hard mental work, it's time to share our insights to our fellow participants with plenty of room for discussions and Q&A.

### 15:00 – 15:30: Coffee Break

By now, you know what to expect. More coffee.

### 15:30 – 16:45: Topic Presentation and Discussion

More presentations and discussions.

### 16:45 – 17:00: Closing

Some final words from our organizing team before we send you out again into the wild world.



## Practical Information

### Quinton House

Nieuwegracht 60  
5512 LT Utrecht

The seminar will take place at the Quinton House, located in a monumental building in the center of Utrecht.



### Restaurant Wilhelminapark

Wilhelminapark 65  
3581 NP Utrecht

Dinner on Saturday will take place in Restaurant Wilhelminapark in the middle of a beautiful park.

