

Department of Computer Science



Mr. Stephan Fahrenkrog-Petersen

PhD student
Humboldt-Universität zu Berlin, Germany

 **Date: 4 January 2022 (Tuesday)**

 **Time: 10:30am – 11:30am**

 **Venue: WLB104, Shaw Campus (All interested are welcome)**

Privacy-preserving Process Mining

ABSTRACT

Process Mining is an emerging subfield of data mining, focusing on the data-driven analysis of business processes. It uses event data recorded while executing the business process. Here, each execution of an activity of the process is captured by an event. A sequence of events, referred to as a trace, then captures the behaviour of single process instance. Yet, traces may enable conclusions on sensitive information of individuals, such as patients, customers, or process workers. Anonymizing traces is challenging, though, since behavioural characteristics need to be preserved for process analysis. Recently, several techniques have been developed to address this challenge. In this talk, we review the state of the art to anonymize event data in Process Mining that ensures differential privacy. Specifically, we present SaCoFa, a technique that anonymizes the control-flow of a business process, while considering the semantics of the injected noise. In addition, we introduce PRIPEL, an approach that enables publishing of multi-variate event data by exploiting local differential privacy.

BIOGRAPHY

Stephan Fahrenkrog-Petersen is a final-year PhD student, working on Privacy-preserving Process Mining, an emerging subfield of Data Mining, at Humboldt-Universität zu Berlin, Germany. His research was published in the proceedings of the premier conferences in the field (BPM, CAiSE, ICPM) and in international journals, such as ACM TMIS and KAIS. His work was recognized with the Distinguished Paper Award at CAiSE 2021 and the Best Student Paper Award at ICPM 2021.

ENQUIRY