

7th International Symposium on

Data-Driven Process Discovery and Analysis SIMPDA 2017

December 6-8, 2017

Neuchatel, Switzerland

Editors:

Paolo Ceravolo

Maurice Van Keulen

Kilian Stoffel

Foreword

With the increasing automation of business processes, growing amounts of process data become available. This opens new research opportunities for business process data analysis, mining, and modeling. The aim of the IFIP 2.6 - International Symposium on Data-Driven Process Discovery and Analysis is to offer a forum where researchers from different communities and the industry can share their insight in this hot new field.

Submissions aim at covering theoretical issues related to process representation, discovery and analysis, or provide practical and operational experiences in process discovery and analysis. Language for papers and presentations is English. In this sixth edition, 22 papers were submitted and 16 papers were accepted for publication in the pre-symposium volume. According to the format of a symposium, the discussion during the event is considered a valuable element that can help to improve the quality of the results proposed or the approach in presenting results. For this reason, authors of accepted papers will be invited to submit extended versions of their articles to a post-symposium volume of Lecture Notes in Business Information Processing, scheduled in 2018.

Our thanks go to the authors who submitted to the conference, to the board of reviewers that made a deep work, and to those who participated in the organization or in the promotion of this event.

We are very grateful to the University of Neuchatel, the Università degli Studi di Milano, the University of Twente, and the IFIP, for supporting this event.

Paolo Ceravolo
Maurice Van Keulen
Kilian Stoffel
SIMPDA co-Chairs

Table of Contents

* Research Papers

- Discovering Customer Journey Maps using a Mixture of Markov Models
Matthieu Harbich, Gaël Bernard, Pietro Berkes, Benoît Garbinato and Periklis Andritsos
pp. 3-7
- On the Use of Hierarchical Subtrace Mining for Efficient Local Process Model Mining
Niek Tax, Laura Genga and Nicola Zannone
pp. 8-22
- A linear temporal logic model checking method over finite words with correlated transition attributes
Jean Michel Couvreur and Joaquin Ezpeleta
pp. 23-37
- An Approach for Automatically Deriving Key Performance Indicators from Ontological Enterprise Models
Ünal Aksu, Dennis Schunselaar and Hajo A. Reijers
pp. 38-53
- Focusing Business Process Lead Time Improvements Using Influence Analysis
Teemu Lehto, Markku Hinkka and Jaakko Hollmén
pp. 54-67
- Detecting Operator Errors Using Anti-Patterns
Arthur Vetter
pp. 68-82
- MMBR: a report-driven approach for the design of multidimensional models
Antonia Azzini, Stefania Marrara, Andrea Maurino and Amir Topalovic
pp. 83-97
- Towards semantic process mining through knowledge-based trace abstraction
Stefania Montani, Manuel Striani, Silvana Quaglini, Anna Cavallini and Giorgio Leonardi
pp. 98-112
- Flexible Data Acquisition in Object-aware Process Management
Sebastian Steinau, Kevin Andrews and Manfred Reichert
pp. 113-127
- Resource Utilization Prediction in Decision-Intensive Business Processes
Simon Sperl, Giray Havur, Simon Steyskal, Cristina Cabanillas, Axel Polleres and Alois Haselboeck
pp. 128-141

* Posters

Exploiting Natural Language Processing for Improving Health Processes

Maurice Van Keulen, Jeroen Geerdink, Gerard Linssen, Riemer Slart and Onno

Vijlbrief

pp. 145-146

Extracting Service Process Models with Teams

Tuuli Klemetti, Reijo Salminen, Olli Martikainen, Riku Saikkonen and Eljas Soisalo-

Soininen

pp. 147-148

Towards Continuous Behavior Mining

Sabine Wolny, Alexandra Mazak, Rafael Konlechner and Manuel Wimmer

pp. 149-150

Big Data Driven Supply Chain Network Design – Insights, Impacts, and a Framework for Assessment

Tiru Arthanari, Shohil Kishore and David Sundaram

pp. 151-152

A Framework for Trace Clustering and Concept-drift Detection in Event Streams

Sylvio Barbon Junior, Gabriel Marques Tavares, Paolo Ceravolo, and Ernesto

Damiani

pp. 153-154

* Research Plans and Demonstrations

Optimizing Configuration Data using Prescriptive Analytics

Alexander Wurl

pp. 158-162

Conference Organization

* Conference Co-Chairs

Paolo Ceravolo, Università degli Studi di Milano, Italy

Maurice Van Keulen, University of Twente, The Netherlands

Kilan Stoffel, University of Neuchatel, Switzerland

* Advisory Board

Ernesto Damiani, Università degli Studi di Milano, Italy

Erich Neuhold, University of Vienna, Austria

Philippe Cudré-Mauroux, University of Fribourg, Switzerland

Robert Meersman, Graz University of Technology, Austria

Wilfried Grossmann, University of Vienna, Austria

* PhD. Award Committee

Paul Cotofrei, University of Neuchatel, Switzerland

Paolo Ceravolo, Università Degli Studi Di Milano, Italy

* Publicity Chair

Fulvio Frati, Università degli Studi di Milano, Italy

Program Committee

AKHIL KUMAR, PENN STATE UNIVERSITY, USA

BENOIT DEPAIRE, UNIVERSITY OF HASSELT, BELGIUM

CHINTAN AMRIT, UNIVERSITY OF TWENTE, THE NETHERLANDS

CHRISTOPHE DEBRUYNE, TRINITY COLLEGE DUBLIN, IRELAND

EBRAHIM BAGHERI, RYERSON UNIVERSITY, CANADA

EDGAR WEIPPL, TU VIENNA, AUSTRIA

FABRIZIO MARIA MAGGI, UNIVERSITY OF TARTU, ESTONIA

GEORGE SPANOUDAKIS, CITY UNIVERSITY LONDON, UK

HARIS MOURATIDIS, UNIVERSITY OF BRIGHTON, UK

ISABELLA SEEBER, UNIVERSITY OF INNSBRUCK, AUSTRIA

JAN MENDLING, VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS, AUSTRIA

JOSEP CARMONA, UPC - BARCELONA, SPAIN

KRISTOF BOEHMER, UNIVERSITY OF VIENNA, AUSTRIA

MANFRED REICHERT, ULM UNIVERSITY, GERMANY

MARCELLO LEIDA, TAIGER, SPAIN

MARK STREMBECK, WU VIENNA, AUSTRIA

MASSIMILIANO DE LEONI, EINDHOVEN TU, NETHERLANDS

MATTHIAS WEIDLICH, HU BERLIN, GERMANY

MAZAK ALEXANDRA, VIENNA UNIVERSITY OF TECHNOLOGY, AUSTRIA

MOHAMED MOSBAH, UNIVERSITY OF BORDEAUX, FRANCE

MUSTAFA JARRAR, BIRZEIT UNIVERSITY, PALESTINE

ROBERT SINGER, FH JOANNEUM, AUSTRIA

ROLAND RIEKE, FRAUNHOFER SIT, GERMANY

SCHAHRAM DUSTDAR, VIENNA UNIVERSITY OF TECHNOLOGY, AUSTRIA

THOMAS VOGELGESANG, UNIVERSITY OF OLDENBURG, GERMANY

VALENTINA EMILIA BALAS, UNIVERSITY OF ARAD, ROMANIA

WIL VAN DER AALST, TECHNISCHE UNIVERSITEIT EINDHOVEN, THE NETHERLANDS

Sponsors

unine

**UNIVERSITÉ DE
NEUCHÂTEL**



**UNIVERSITÀ
DEGLI STUDI
DI MILANO**



University of Twente
The Netherlands

