

Lecture Notes in Business Information Processing

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Data-Driven Process Discovery and Analysis

6th IFIP WG 2.6 International Symposium, SIMPDA 2016
Graz, Austria, December 15–16, 2016
Revised Selected Papers

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ISSN 1865-1348 ISSN 1865-1356 (electronic)
Lecture Notes in Business Information Processing
ISBN 978-3-319-74160-4 ISBN 978-3-319-74161-1 (eBook)
<https://doi.org/10.1007/978-3-319-74161-1>

Library of Congress Control Number: 2017964219

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Printed on acid-free paper

This Springer imprint is published by Springer Nature
The registered company is Springer International Publishing AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

The rapid growth of organizational and business processes data, managed via information systems, has made available a big variety of information that consequently created a high demand for making data analytics more effective and valuable. The sixth edition of the International Symposium on Data-Driven Process Discovery and Analysis (SIMPDA 2016) was conceived to offer a forum where researchers from different communities could share their insights into this hot new field. As a symposium, SIMPDA fosters exchanges among academic research, industry, and a wider audience interested in process discovery and analysis. The event is organized by the IFIP WG 2.6. This year the symposium was held in Graz.

Submissions cover theoretical issues related to process representation, discovery, and analysis or provide practical and operational examples of their application. To improve the quality of the contributions, the symposium is structured for fostering discussion and stimulating improvements. Papers are pre-circulated to the authors, who are expected to read them and make ready comments and suggestions. After the event, authors have the opportunity to improve their work extending the presented results. For this reason, authors of accepted papers were invited to submit extended articles to this post-symposium volume. We received 18 submissions and five papers were accepted for publication in this volume.

During this edition, the presentations and the discussions frequently focused on the adoption of process mining algorithms for continuous monitoring of business processes. The current selection of papers underlines the most relevant challenges that were identified and proposes novel solutions for facing these challenges.

In the first paper, “Model and Event Log Reductions to Boost the Computation of Alignments,” Farbod Taymouri and Josep Carmona present a novel technique for the reduction of a process model based on the notion of indication. Because the occurrence of an event in the model reveals the occurrence of some other events, fewer data can be analyzed when the model and log alignment are computed.

The second paper, by Hamda Al-Ali et al., is titled “Translating BPMN to Business Rules” and presents a novel technique to extract compliance, expressed in first-order-logic, from a BPMN model. The technique is applied to a scenario aimed at implementing continuous analysis of business process execution.

The third paper by Alexandra Mazak et al., “Execution-Based Model Profiling,” proposes execution-based model profiling as a continuous process to improve prescriptive models at design-time through runtime information. This approach incorporates knowledge in terms of model probes from execution logs of the running system. To accomplish this, the authors combine techniques of process mining with runtime models of MDE.

The fourth paper by Alifah Syamsiyah et al., “DB-XES: Enabling Process Discovery in the Large,” faces the challenge of developing scalable process discovery for processing a large set of event log data. In particular, a relational database is used for

storing event data and for pre-processing the event data, moving some computations from analysis time to data ingestion time.

The fifth paper by Ye Zhang et al., “Extracting Service Process Models from Location Data,” aims at simplifying the procedure of modeling generic service processes that are location aware. An approach based on wireless indoor positioning is developed to acquire the minimum amount of location-based process data that can be used to automatically extract the process models.

We gratefully acknowledge the research community that gathered around the problems related to process data analysis. We would also like to express our deep appreciation of the reviewers’ hard work and dedication. Above all, thanks are due to the authors for submitting the best results of their work to the Symposium on Data-Driven Process Discovery and Analysis.

We are very grateful to the Università degli Studi di Milano and to IFIP for their financial support, and to the Graz University of Technology for hosting the event.

November 2017

Paolo Ceravolo
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