

13th International Workshop on Business Process Intelligence (BPI 2017)

Citation for published version (APA):

van Dongen, B. F., De Weerd, J., Burattin, A., & Claes, J. (2018). 13th International Workshop on Business Process Intelligence (BPI 2017). In E. Teniente, & M. Weidlich (Eds.), *Business Process Management Workshops: BPM 2017 International Workshops, Barcelona, Spain, September 10-11, 2017, Revised Paper* (pp. 161-164). (Lecture Notes in Business Information Processing; Vol. 308). Springer. <https://doi.org/10.1007/978-3-319-74030-0>

DOI:

[10.1007/978-3-319-74030-0](https://doi.org/10.1007/978-3-319-74030-0)

Document status and date:

Published: 01/01/2018

Document Version:

Publisher's PDF, also known as Version of Record (includes final page, issue and volume numbers)

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

www.tue.nl/taverne

Take down policy

If you believe that this document breaches copyright please contact us at:

openaccess@tue.nl

providing details and we will investigate your claim.

**13th International Workshop
on Business Process Intelligence
(BPI 2017)**

Introduction to the 13th International Workshop on Business Process Intelligence (BPI 2017)

Boudewijn van Dongen¹, Jochen De Weerd², Andrea Burattin³,
and Jan Claes⁴

¹ Eindhoven University of Technology, Eindhoven, The Netherlands

² KU Leuven, Leuven, Belgium

³ Technical University of Denmark, Kongens Lyngby, Denmark

⁴ Ghent University, Ghent, Belgium

1 Aims and Scope

Business Process Intelligence (BPI) is a growing area both in industry and academia. BPI refers to the application of data- and process-mining techniques to the field of Business Process Management. In practice, BPI is embodied in tools for managing process execution by offering several features such as analysis, prediction, monitoring, control, and optimization.

The main goal of this workshop is to promote the use and development of new techniques to support the analysis of business processes based on run-time data about the past executions of such processes. We aim at bringing together practitioners and researchers from different communities, e.g. Business Process Management, Information Systems, Database Systems, Business Administration, Software Engineering, Artificial Intelligence, and Data Mining, who share an interest in the analysis and optimization of business processes and process-aware information systems. The workshop aims at discussing the current state of ongoing research and sharing practical experiences, exchanging ideas and setting up future research directions that better respond to real needs. In a nutshell, it serves as a forum for shaping the BPI area.

The 13th edition of this workshop attracted 16 international submissions. Each paper was reviewed by at least three members of the Program Committee. From these submissions, the top eight were accepted as full papers for presentation at the workshop.

The papers presented at the workshop provide a mix of novel research ideas, evaluations of existing process mining techniques, as well as new tool support. *Burattin and Carmona* propose a framework for online conformance checking. *Deeva, De Smedt, De Koninck and De Weerd* compared process mining and sequence mining techniques for dropout prediction in MOOCs. *Korneef, Solti, Leopold and Reijers* propose a probabilistic approach towards identifying most probable alignments. *Sanchez-Charles, Carmona, Muntés-Mulero and Solé* investigate the use of word embedding for reducing the amount of labels in an event log by combining events with semantically similar names. *Seeliger, Stein and Mühlhäuser* present a novel approach

which provides suggestions for redesigning business processes by using discovered as-is process models from event logs and apply motif-based graph adaptation. *Fani Sani, Van Zelst and van der Aalst* address the problem of complex and incomprehensible discovered process models with a general purpose filtering method that exploits observed conditional probabilities between sequences of activities. *Syamsiyah, van Dongen and van der Aalst* focus on recurrent process mining, i.e. the application of process discovery to systems from which data can be extracted near real time, by keeping an intermediate structure persistent in the database thus reducing the time to rediscover process models from the same data source. Finally, *Rehse, Fetteke and Loos* analyse the influence of unobserved behaviour on the quality of discovered process models.

This year, the BPI workshop is also co-located with the second Process-Discovery Contest, organized by Josep Carmona, Massimiliano de Leoni, Benoit Depaire and Toon Jouck. With the patronage of the IEEE Task Force on Process Mining, the contest aims to assess tools and techniques that discover business process models from event logs. Compared with the 2016 edition, this year the contest aims to ensure that the models provide business values for process owners. Another change compared to 2016, is the introduction of trace completeness. Five out of the 10 event logs marked are characterized by containing 20% of incomplete traces. Those traces are incomplete in the sense that they are missing the last events. This is very common in reality because event logs are usually extracted from information systems in which a certain number of process executions are still being carried on. The objective is to compare the effectiveness of techniques to discover process models that provide a proper balance between “overfitting” and “underfitting”. For the purpose of the contest, 10 “reference” models were created. For each process model, a perfectly-fitting training event log was generated. These training logs were used by the contestants to discover 10 process models. Contestants were allowed to use any technique or combination of techniques. The winner is the contestant that could discover process models that are the closest to the original process models. To assess this, a classification perspective was used. For every process model, an undisclosed “reference” test log was created containing 20 traces, of which 10 positive traces (traces recording behavior compliant with the “reference” model) and 10 negative (the trace recording behavior not compliant with the “reference” model). The winner is the group that discovers the models with the highest accuracy, namely which contains the largest number of true positive and the lowest number of true negative traces, within the “reference” model. As an example, a false positive is a trace that is compliant with the discovered model but, in fact, is not compliant with the “reference” model. The winner was the team of P. Dixit and H. Garcia Caballero, who generated accurate models (98.5%) that were considered as highly understandable by the jury.

As with previous editions of the workshop, we hope that the reader will find this selection of papers useful to keep track of the latest advances in the BPI area, and we are looking forward to keep bringing new advances in future editions of the BPI workshop.

2 Workshop Co-organizers

| | |
|----------------------|---|
| Boudewijn van Dongen | Eindhoven University of Technology, The Netherlands |
| Jochen De Weerd | KU Leuven, Belgium |
| Andrea Burattin | Technical University of Denmark, Denmark |
| Jan Claes | Ghent University, Belgium |

3 Program Committee

| | |
|---------------------------|---|
| Joos Buijs | Eindhoven University of Technology, The Netherlands |
| Josep Carmona | Universitat Politècnica Catalunya, Spain |
| Raffaale Conforti | Queensland University of Technology, Australia |
| Johannes De Smedt | The University of Edinburgh, UK |
| Benoit Depaire | Universiteit Hasselt, Belgium |
| Claudio Di Ciccio | Vienna University of Economics and Business, Austria |
| Chiara Di Francescomarino | Fondazione Bruno Kessler – IRST, Italy |
| Marlon Dumas | University of Tartu, Estonia |
| Diogo R. Ferreira | IST, University of Lisbon, Portugal |
| Gianluigi Greco | University of Calabria, Italy |
| Daniela Grigori | Laboratoire LAMSADE, University Paris-Dauphine, France |
| Mieke Jans | Universiteit Hasselt, Belgium |
| Gert Janssenswillen | Universiteit Hasselt, Belgium |
| Anna Kalenkova | Higher School of Economics, Russia |
| Michael Leyer | University of Rostock, Germany |
| Fabrizio Maggi | University of Tartu, Estonia |
| Jan Mendling | Wirtschaftsuniversität Wien, Austria |
| Steven Mertens | Ghent University, Belgium |
| Jorge Munoz-Gama | Pontificia Universidad Católica de Chile, Chile |
| Viara Popova | University of Tartu, Estonia |
| Manfred Reichert | University of Ulm, Germany |
| Pnina Soffer | University of Haifa, Israel |
| Andreas Rogge-Solti | Vienna University of Economics and Business, Austria |
| Suriadi Suriadi | Queensland University of Technology, Australia |
| Toon Jouck | Universiteit Hasselt, Belgium |
| Seppe vanden Broucke | KU Leuven, Belgium |
| Eric Verbeek | Eindhoven University of Technology, The Netherlands |
| Matthias Weidlich | Humboldt-Universität zu Berlin, Germany |
| Hans Weigand | Tilburg University, The Netherlands |