

## Selected Papers of BPM 2019 - Editorial to the Special Issue

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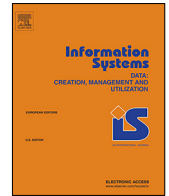
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## Editorial

# Selected Papers of BPM 2019 - Editorial to the Special Issue



### From the guest editors

This special issue contains extended versions of a selection of papers presented at the 17th International Conference on Business Process Management (BPM) that took place in Vienna, Austria, September 1–6, 2019. The annual BPM conference is the premier forum for researchers, practitioners, and developers in the field of BPM. Each year, it is an exciting event organized around a series of scientific talks, industry forums, technical tutorials, and panels covering various aspects of BPM research and practice, including theory, management, applications, and technology. It is an opportunity for the worldwide BPM scientific community to congregate.

Today, BPM thinking lies at the heart of most successful business organizations. It is an interdisciplinary field at the intersection of information technology, organizational management, and industrial engineering. In recent years, it has been expanding its scope and span to embrace other issues raised by behavioral science, big data, operations management, social computing, cloud computing, theory of processes, etc. Accordingly, researchers are trying to foster true innovation rather than only incremental change in this field by developing new approaches for design of flexible, loosely structured and ad hoc processes that go beyond just the control flow modeling of a process. Rather, there is a need to also capture the various other dimensions that relate to the successful realization of efficient processes, such as the data flows, the social and human aspects, and temporality, location and non-human resource issues.

In part to advance thinking along such directions, BPM 2019 featured a rich program including 6 Keynotes, 4 Tutorials, 1 Panel Discussion, 23 Research Talks, 13 Contributions to the BPM Forum, 17 Corporate Case Studies in the Industry Forum, 11 Talks in the Blockchain Forum, 8 Talks and 6 posters in the Central and Eastern Europe Forum, 12 Workshops, 56 Workshop Presentations, 15 Tool and Prototype Demonstrations, 11 Talks in the Doctoral Consortium, and 15 International Sponsors. Once again the paper selection was very rigorous. We received a total of 157 submissions, from which we took 115 into review. Each submission was reviewed by at least three Program Committee (PC) members and one senior PC member. In total, 23 papers were accepted for the main conference. This corresponds to an acceptance rate of 15%.

In this special issue, we are pleased to present the extended versions of 4 papers out of the 23 accepted in the research tracks. These four papers cover different topics of BPM and were selected after careful evaluation because they stood out for their significance and novelty. Each of them was revised and expanded

into journal length papers for this special issue, and underwent an additional review process for the journal. We provide a brief overview of the extended versions of these papers below.

- The article *Sampling and Approximation Techniques for Efficient Process Conformance Checking* by Bauer et al. tackles the problem that conformance checking does not scale due to its exponential runtime complexity. The authors build on statistical methods and devise a sampling-based method to determine interval estimations of conformance measures. It is demonstrated that this approach substantially reduces runtime.
- The article *A First-Order Logic Verification Framework for Communication-Parametric and Time-Aware BPMN Collaborations* by Sara Houhou et al. addresses the challenge of verifying BPMN Collaborations. The adequate consideration of communication and time has been a challenge for such verification. The authors propose a novel framework that tackles this problem using first-order logic. The formal concepts are implemented as a tool that builds on the TLA+ model checker.
- The article *Computation of Alignments of Business Processes through Relaxation Labelling and Local Optimal Search* by Lluís Padró addresses the problem of calculating alignments, which has suffered from computational complexity. The authors present a novel technique that works with relaxation labelling and local optimal search. In this way, they achieve a speed-up of several orders of magnitude.
- The article *Assured Automatic Dynamic Reconfiguration of Business Processes* by Leandro Nahabedian et al. addresses the problem of business process reconfiguration. Key challenges in this context are changes in policies and regulations. The authors provide an automatic technique that builds on concepts from discrete controller synthesis. It is shown that this approach yields a reconfiguration that ensures all requirements.

We take this opportunity to thank all the reviewers of this special issue for their valuable contribution in ensuring the high quality of the papers. We are also grateful to the editorial team of Information Systems for featuring our special issue in their prestigious journal, and the journal's technical team for their assistance in managing the review process.

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