

**First International Workshop on
Emerging Computing Paradigms
and Context in Business Process
Management (CCBPM)**

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BPM has been referred to as a “holistic management” approach to align an organization’s business processes with the needs of users. It promotes business effectiveness and efficiency while striving for innovation, flexibility, and integration with technology. However, the challenge for a large-scale use of business process is the failure in addressing both the dynamic execution environment (e.g., cloud and fog) and the elastic requirement of users (i.e., logic of use). Two streams of research emerge to address this problem. In the upstream, researchers try to make explicit the contextualization process in designing flexible and elastic business process for process optimization and reuse. In the downstream, emerging computing paradigms such as mobile-cloud and fog computing could bring a promising orchestration of business process but involve a revision of BPM architecture.

The goal of CCBPM 2018 was to promote the role of emerging computing paradigms such as mobile-cloud computing, edge computing, especially fog computing, and context in business process management (BPM) by discussing (1) what the distributed computing and context community can bring to the BPM community, including business and scientific workflow management; and (2) what are the challenges of BPM and workflow system that the BPM community think these emerging computing paradigms and context (e.g., context-aware fog computing-based workflow system) may solve. After the previous CCBPM events including CCBPM 2013 (October 28, 2013, Annecy, Haute-Savoie, France), CCBPM 2014 (August 27, 2014, Beijing, China), and CCBPM 2015 (November 4, 2015, Shanghai, China), CCBPM 2018 extended its scope to accommodate the latest progress in computing paradigms especially in fog computing.

This year, the workshop received a good number of international submissions. Each paper was reviewed by at least three members of the Program Committee. Finally, the top five were accepted as full papers for presentation at the workshop. These papers provide a good coverage of hot topics in BPM. Rongbin Xu, Yeguo Wang, Yongliang Cheng, et al. propose a workflow scheduling algorithm based on improved particle swarm optimization for seeking the best trade-off between makespan and cost in a cloud-fog environment. Junhua Zhang, Dong Yuan, Lizhen Cui, and Bing Bing Zhou investigate the trade-off problem of resource utilization and propose a provenance candidates elimination algorithm that can efficiently find the minimum cost strategy for data storage, transfer, and regeneration BPM in multiple clouds. Christian Sturm, Jonas Szalanczi, Stefan Schonig, and Stefan Jablonski present a novel lean architecture of a blockchain-based process execution system with smart contracts to dispense with a trusted third party in the context of inter-organizational collaborations. Yuanchun Jiang, Cuicui Ji, Yang Qian, and Yezheng Liu present a two-phase approach to

discover related cloud services by jointly leveraging the descriptive texts of services and their associated tags to achieve better recommendation results than traditional service clustering and recommendation methods. Finally, Tianhong Xiong, Yang Yu, Maolin Pan, and Jing Yang propose a workflow modeling approach based on state machines to design a crowdsourcing model that can support complex crowdsourcing tasks, especially creative tasks. This year, the workshop also featured a keynote speech delivered by Professor Shiping Chen on “Blockchain—Yesterday, Today, and Tomorrow.”

We hope that the audience will find this year’s papers interesting and useful to keep track some of the latest topics in the area of computing paradigms and context technologies for BPM, and we look forward to bringing you the future editions of the CCBPM workshop.

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Xiao Liu
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Organization

Program Committee

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