



Computing

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Call for Papers

Special Issue on
Software-driven Big Data Analytics

Guest Editors

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The emerging age of big data is leading us to an innovative way of understanding our world and making decisions. In particular, it is the data analytics that eventually reveals the potential values of datasets and completes the value chain of big data. Correspondingly, big data analytics (BDA) applications have become a new and crucial instance within the software-driven world.

Since BDA software systems usually include complex programs with specific analytical methods deployed on large-scale parallel processing infrastructure, there are inevitably challenges in BDA application implementations. For example, on one hand, big data itself can cause significant performance problems in application programs in general, especially when involving databases; on the other hand, different types of data and demands might require completely different BDA applications with various time and space complexity.

Given the inherent software characteristics of BDA applications, software engineering (SE) acts as a key to addressing the existing challenges in the BDA domain and supporting different areas and aspects of BDA practices. For instance, in addition to applying SE theories, methods, techniques, and tools to developing and deploying BDA applications, engineering generic architectures and platforms for BDA applications has become an urgent need in the near future to serve data scientists who do not have much SE background.

Meanwhile, the unprecedented challenges and requirements arisen from BDA also drive revolutionary directions and opportunities of SE. It has been identified that dealing with the various Vs (such as volume, variety, velocity, veracity, etc.) of big data demands both novel functional features (e.g., new analytics algorithms and tools) and non-functional improvements (e.g., continuous delivery and quality assurance) of software systems in the BDA domain. Recently, the association and interaction between SE and BDA appear to have gained attentions and popularity among a large number of researchers in multiple disciplines, which particularly encourages and influences the leading-edge research in SE.

Topics of the Special Issue

The topics of interest include, but are not limited to:

- Theoretical foundations of SE in the BDA research.
- Software architectures and design patterns for constructing BDA applications.
- Quality assurance of BDA software systems.
- Empirical primary and secondary studies in SE for/in BDA.
- Evidential assessments on the rigor, effectiveness, and relevance of a variety of software technologies in the BDA domain.
- Experiences in applying theoretical and empirical knowledge of SE to BDA practice.
- Challenges and lessons learned from adopting SE techniques and methods in the BDA research and practice.
- Areas where future SE for/in BDA studies are needed.
- Research agenda for maturing and enriching SE for/in BDA practices.

Tentative Schedule

Submission due date:	June 30th, 2018
Notification of acceptance:	September 30th, 2018
Submission of final manuscript:	October 30th, 2018

Major Guidelines

The special issue invites original research papers that make significant contributions to the state-of-the-art in SE for/in BDA research area. We seek submission of papers that present new, original and innovative ideas for the “first” time in Computing Journal. That means, submission of “extended versions” of already published works (e.g., conference/workshop papers) is not encouraged unless they contain significant number of “new and original” ideas/contributions along with more than 50% brand “new” material. If you are submitting an extended version, you SHOULD submit a cover letter/document detailing (1) the “Summary of Differences” between Computing Journal paper and earlier paper, (2) a clear listing of “new and original” ideas/contributions in Computing Journal paper (identifying sections where they are proposed/presented), and (3) confirming the percentage of new material. Otherwise, submission will be “desk” rejected without any reviews.

Every submitted paper will receive at least two reviews. The editorial review committee will include well known experts in the area of Software Engineering and Big Data Analytics.

Selection and Evaluation Criteria

- Significance to the readership of the journal
- Relevance to the special issue
- Originality of idea, technical contribution, and significance of the presented results
- Quality, clarity, and readability of the written text
- Quality of references and related work
- Quality of research hypothesis, assertions, and conclusion

Submission Guidelines

Papers should be formatted according to the *Computing* journal instructions for authors at: <http://www.springer.com/607>. Springer has LaTeX templates: see “Instructions for Authors / Text” at <http://www.springer.com/607>. No templates for Word. Either LaTeX OR Word is accepted.

Manuscript length

Please note, the special issues page limit is different from *Computing* regular paper submissions. Papers that exceed the length of 12 pages may not be considered for review and publication. In special cases up to 15 pages will be allowed subject to approval from the Guest Editors. Authors aiming for 15 page submission should contact the Guest Editors in advance.

Submission instruction

The article will be submitted in the usual way via the online submission site at (<http://www.springer.com/607>).

When submitting a manuscript for this special issue, authors should take care to select ‘Special Issue Software-driven Big Data Analytics’ as the Manuscript Type.