Special Issue on Blockchain and Decentralized Applications

Software: Practice and Experience (Wiley Press)

Call for Papers

Blockchain has become increasingly popular in both academia and industry. Blockchain is a new technology leveraging a number of Computer Science concepts, such as distributed data storage, point-to-point transmission, consensus mechanisms, and encryption algorithms. Its characteristics, such as decentralization, openness, autonomy, tamper-resistency and anonymity, play an important role in the development of the market economy. In addition, the advantages of blockchain could be further evolved in terms of security, privacy, efficiency, scalability, flexibility and reliability, and potential applications for this technology are growing exponentially.

Blockchain has been widely applied to the development of decentralized applications (DApps). DApps relies on blockchain and consensus mechanism to accomplish a given task. DApp does not depend on any centralized server, and has the potential to enhance reliability of the software and decrease the cost of central trusted authority. DApps have plenty of advantages in changing the process of user authentication, promoting security of transactions, transforming industry supply chains, reducing the cost of operation and maintenance, decreasing the cost of technology development, and improving the user's experience.

This special issue seeks innovative and advanced research on blockchain and DApps and its applications from the perspective of both academic and industry. It will help in integrate blockchain and DApps research, exhibit a variety of challenging and relevant problems and new requirements, and bring more opportunities and challenges for research communities.

Topics of interest include, but are not limited to:

- Practical applications of distributed ledger technology
- Software solutions to distributed storage
- Scalability solutions for blockchain-based software

- Blockchain for decentralization and distributed systems
- Fundamental theories and approaches for blockchain and DApps
- New distributed consensus algorithms for blockchain and DApps
- Theories and applications of smart contracts
- New applications and models enabled by blockchains
- Distributed blockchain schemes for DApps
- Security, privacy, and trust of blockchain and DApps
- Performance optimization and evaluation of blockchain and DApps
- Fault tolerance mechanisms for blockchain and DApps
- Blockchain in crowdsourcing and crowdsensing
- Blockchain in edge computing
- New threat models and attacks on existing blockchain technologies
- Incentive mechanisms for blockchain and DApps
- Fraud detection in blockchain and DApps
- Standards and interfaces related to blockchain and DApps
- Novel approaches to the development of blockchain applications
- Relationship and interplay of open source and blockchain technology
- Architectures and implementations for blockchain and DApps
- Design, optimization and improvement of blockchain and DApps
- Data analysis and mining for blockchain and DApps
- Blockchain and Internet-of-Things
- Applications of blockchain and DApps

Important Dates

Submission Due: March 31, 2019
Notification Due: May 31, 2019
Revision Due: July 31, 2019
Notification of final acceptance: August 31, 2019
Notification of final revised paper: September 30, 2019

Special Issue Paper Submission

This special issue seeks submission of papers that present novel and innovative ideas. All submissions including invited papers go under regular peer review process.

We seek submission of papers that present new, original and innovative ideas for the "first" time in SPE. Submission of "extended versions" of already published works (e.g.,

conference papers) is not encouraged unless they contain a significant number of "new and original" ideas/contributions along with more than 50% brand "new" material. If you are submitting an extended version, you must submit a cover letter/document detailing (1) the "Summary of Differences" between the SPE paper and the earlier paper, (2) a clear list of "new and original" ideas/contributions in the SPE paper (identifying sections where they are proposed/presented), and (3) confirming the percentage of new material. Otherwise, the submission will be "desk" rejected without being reviewed.

While submitting paper to this issue, please select "SPE-SI- Blockchain and Decentralized Applications" in the submission system.

Regular Issue Submission

"If you have a paper on cloud computing which does not match the requirements of the Special Issue, we encourage you to submit it as a regular paper to Software: Practice and Experience. The journal has expanded its coverage to specifically include cloud computing."

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