Special Issue on "DLTs, Blockchains and Cryptocurrencies for Distributed Systems"

Guest Editors

Prof. **Stefano Ferretti**, University of Urbino <stefano.ferretti@uniurb.it>
Stefano Ferretti is an Associate Professor at the Department of Pure and Applied Sciences of the University of Urbino. He received the Laurea degree (summa cum laude) and a Ph.D. in Computer Science from the University of Bologna respectively in 2001 and in 2005. His current research interests include distributed systems, computer networks, complex networks, data science and mobile communications. He is in the editorial board of the Simulation Modelling Practice and Theory (SIMPAT) journal published by Elsevier.

Dr. **Gabriele D'Angelo**, University of Bologna <g.dangelo@unibo.it>
Gabriele D'Angelo received the Laurea degree (summa cum laude) in Computer Science in 2001, and a Ph.D. in Computer Science in 2005, both from the University of Bologna, Italy. He is an Assistant Professor at the Department of Computer Science and Engineering, University of Bologna. His research interests include parallel and distributed simulation, distributed systems, online gaming and computer security. Since 2011 he is in the editorial board of the Simulation Modelling Practice and Theory (SIMPAT) journal published by Elsevier and he is a Technical Program Committee member of INFOCOM 2020.

Call for Papers

The Internet is evolving into a new multi-factor paradigm based around smart systems, Internet of Things, new distributed data structures (e.g. blockchains and distributed ledgers in general) and digital assets (e.g. cryptocurrencies). In the next few years, these technologies will converge and interact, fostering novel services, business models and applications. Indeed, the blockchain, and all the novel Distributed Ledger Technologies (DLTs) in general, can provide an automated and secure transaction infrastructure for next generation Internet of Things (IoT), mobile and smart systems while the voluntary user participation to the mining of cryptocurrencies could permit the development of new distributed services (i.e. offering an alternative to the advertisement-based revenue system used by most of the "free services" that are currently available).

This special issue seeks to explore recent trends and new challenges posed by the novel techniques, methodologies and applications that are based on Distributed Ledger Technologies (DLTs) and blockchain infrastructures. The goal is to promote discussion on theory, progresses, development, deployment and on the practical usage of

cryptocurrencies, blockchain technologies, smart contracts, DLTs, etc. We are interested both in innovative works in an unexplored and/or emerging topic in the broad area of distributed systems (e.g., mobile systems, devices and applications, vehicular and robotic systems, IoT), and in novel findings and/or new insights that build on existing works.

The specific areas of interest include, but are not limited to:

- All kind of blockchain based distributed systems
- Distributed (smart) systems relying on cryptocurrencies and smart contracts
- DLTs and the Internet of Things (IoT)
- Blockchain and mobile systems
- Blockchain and DLT based mobile ad-hoc networks
- Blockchain and DLT based intelligent vehicular coordination
- Vehicular services based on cryptocurrencies and blockchain
- Blockchain solutions for automotive
- Use of blockchain to support mobile smart services and applications
- Blockchain in crowdsourcing and crowdsensing
- Blockchain in 5G
- Blockchain in edge and cloud computing
- Use of blockchain and DLTs in Smart Cities
- Blockchain schemes for decentralization
- Blockchain-inspired or alternative byzantine fault tolerance
- Performance optimization of blockchain and decentralized schemes
- Use of blockchain in healthcare applications
- Blockchains' energy consumption issues
- Security related issues in cryptocurrencies and blockchain
- Simulation of blockchains
- Use of blockchain in distributed simulation
- Use of cryptocurrencies in public volunteer computing
- Cryptocurrencies and blockchain usage in online gaming architectures and digital virtual environments
- Multi-Agent Systems for modelling the usage of cryptocurrencies
- Decentralized (mobile) processing, computing, and storage infrastructure
- Testing mechanisms to increase interoperability, robustness, stability, and confidence in blockchain (mobile) systems

Important Dates:

Manuscript submission deadline: November 30, 2020
Manuscript reviews to authors: January 31, 2021
Manuscript revision due: March 31, 2021
Final notification of acceptance: May 31, 2021
Final manuscript submission deadline: June 30, 2021

Instructions for the special issue

This special issue calls for submissions on the thematic areas of DLTs, Blockchains and cryptocurrencies based systems and applications. This call is **open for all contributions**, but also invites **selected papers** from the **CryBlock 2020** **workshop**, held in conjunction with the ACM MobiCom conference. Submissions should be prepared for publication according to the journal submission guidelines. The submitted papers must have at least 50% difference from any other papers. There is a limit of 15 papers plus an editorial in the special issue. There is an 18 page max length limit (inclusive of figures and tables).

Please submit your contribution via the online submission systems at:
https://mc.manuscriptcentral.com/cpe

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