August 2018

Call for Book Chapters:
Innovations on Cooperative Computing and Enterprise Blockchains

SERIES EDITOR:
Cyrus F. Nourani, PhD
Research Professor,
Academic R&D at Berlin, Munich, Germany
E-mail: Acdmkrd@gmail.com

Innovation Management and Computing

Innovations on Cooperative Computing and Enterprise Blockchains

Cyrus F. Nourani
Editor

APPLE ACADEMIC PRESS   **CRC Press** Taylor & Francis Group

ABOUT THE INNOVATION MANAGEMENT AND COMPUTING SERIES

Innovation is the generation and application of new ideas and skills to produce new products, processes, and services that improve economic and social prosperity. This new book series covers important issues in the burgeoning field of innovation management and computing, from an overview of the field to its current and future contributions. The volumes will be of value and interest to computer and cognitive scientists, economists, engineers, managers, mathematicians, programmers, and engineers.

VOLUMES OPEN FOR CONTRIBUTIONS
Volume 4: Innovations on Cooperative Computing and Enterprise Blockchains
**With Guest coeditor(s)**

Please submit single page abstract proposals for chapters by November 5, 2018

Due to the heterogeneity of multi-agent systems, a single approach focusing on all of the issues is often not enough. This volume's goals are to present new directions of research into the coordination and control of multi-agent systems, by bringing together researchers working in all areas. Intelligent agents possess several important computational roles. These include the ability to communicate, cooperate, and collaborate, but all these must be coordinated. This volume will present an overview of the abilities for coordination and cooperation. Self-interest is a key characteristic of multi-agent systems.

Agents pursue their individual objectives. These objectives, while consistent but can be completely contradicting, often require cooperation between agents and, in particular, often cannot be ensured by individual agents. As a consequence, actions and behaviors need to be coordinated to satisfy the agents' objectives; however they also have to be controlled to meet the encompassing goal system's specifications. Coordination games can represent interactions between multiple agents in many real-life situations. Combining model learning techniques, agents tend to become more consistent in effective cooperative behavior.

How data is designed stored and managed is rapidly changing. The Internet of Things (IoT), Artificial Intelligence (AI), and analytics are driving the trends. Traditional databases, designed pre-Internet, are unable to handle Big Data, types, and volume created. The amount of data and the scope of use of that data in traditional systems are very limited, greatly reducing viability in the world of unstructured Big Data. New infrastructures for storing data, e.g. cloud storage, create complicated scenarios. Besides technical limitations, there are privacy risks when trusting a service with information.

Businesses should be looking at alternative methods of storage—they're in possession of more data than ever before (2.5 quintillion bytes of it are produced daily). And that data is wasted if it can't be used to derive insights that can be leveraged to target a wider audience and increase revenue.
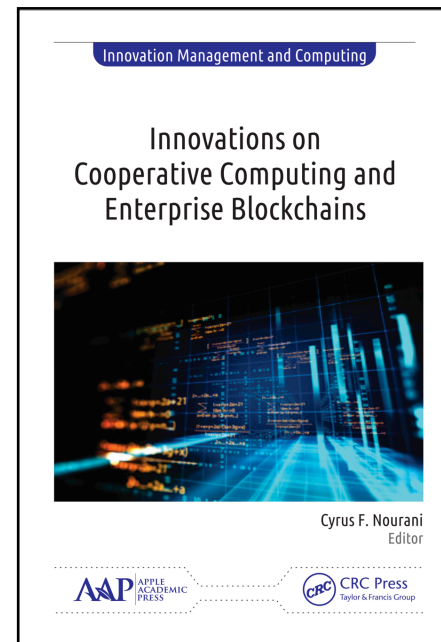
For storing data in this rapidly developing climate, it's imperative that more resilient and efficient databases are created. They need to be highly secure and adept at catering to the needs of applications in the fields of IoT and AI. To these ends, I believe that blockchain technology is an ideal solution.

Instead of being run by an entity such as Amazon or Google, blockchain's integrity is assured by nodes in the network that sync copies of the database.

Topic areas on the special issue will include:

- Formal methods for cooperative computing: This area has been successfully applied to multi-agent systems. Blockchain is a very important new application for the above. Among other things, an advantage of formal methods in comparison to non-formal ones is that they allow for rigorous system specification, verification and automation.
- Cooperative agent game tree planning: The cognitive models of agents, as well as agent communication languages, are heavily influenced by multi-agent logics, logic-based approaches are most often used directly to describe and to reason about the system from the outside, as opposed to actively change the state of the system or to reach agreements by agents inside the system.
- Agent coordination and cooperation cognitive loops: Agreement technologies are tailor-made for allowing agents to arrive at agreements. Their acceptance affects the behavior of the agents and depends on the way norm violations are detected and sanctioned. Aspects that influence agents' behavior, including:
  - strategic power
  - argumentation abilities,
  - resource limitations
  - social dependencies, and roles.
  - interaction between rational decision makers in general, and coordination problems in particular

- Blockchain as the new trend for cooperative distributed computing.

- Digital assess and the value chains
- Data types
- Owned data asset vs public data assets on value chains
- Crypto assets

- Business networks and digital asset transactions: topic areas

- Crypto stake on protocols

- Digital signatures
- Cryptosignatures
- Transactional value chains
- Blockchain protocols and transaction processing
- Distributed ledgers

- Digital encrypted ledgers
- Digital assets: digital identity, and cryptocurrency
- Immutability on network transactions
- Shared ledgers and digital IDs
- Decentralizing digital assets and distributed AI

- Block Sequencing and data stringing,
- Hash code distributed transactions
- Multisignature cooperative transactions
- Distinguishing blockchain technology and cryptocurrency issues
- Interbank Transactions
- Sharing distributed data with digital assets
- Cryptocurrency: a single-purpose decentralized digital asset
- Blockchain programmable digital asset
- Smart data models for blockchain databases
- Cryptoeconomics
- Embedding trust in transactions
- Distributing trust on the internet
- Scalable transparent group data sharing
- **Important area: Can businesses use blockchains to solve the problem of data management?**

TO SUBMIT CHAPTER PROPOSALS:
There is no fee for inclusion of chapters. Authors interested may submit a short proposal [title, authors' names and contact information, summary, keywords] of the chapter by email: Acdmkrd@gmail.com. Authors who cannot meet this deadline of submission of full chapter can indicate their proposed date of submission for consideration. PLEASE DO NOT SUBMIT COPYRIGHTED ARTICLES that have been published unless you have reprint permission from the original publisher.

Manuscript specifications: e-copy of the full chapter submitted in Word on a letter-sized paper with no line numbering, a line spacing of 1.5, Times New Roman 11-point font size, margins top/bottom of 1", margins left/right of 1.25", and

editable equations with an equation editor in WORD 2010. A typical chapter will include the title, authors' names with affiliation/email/mailing address, introduction, literature review (if applicable), theoretical approach (if applicable), materials and methods, results and discussion, conclusions, summary, detailed list of keywords, references using numbering system and alphabetical order, any appendix, etc. Also, we prefer a numbering system for citations in the body of a chapter. More complete information is available upon request.

CURRENT VOLUMES IN THE SERIES:

- **E**cosystems and Technology: Idea Generation and Content Model Processing
  http://www.appleacademicpress.com/ecosystems-and-technology-idea-generation-and-content-model-processing/9781771885072

- **Computing Predictive Analytics, Business Intelligence, and Economics: Modeling Techniques with Startups and Incubators** (forthcoming December 2018)
  http://www.appleacademicpress.com/computing-predictive-analytics-business-intelligence-and-economics modeling-techniques-with-start-ups-and-incubators/9781771887298

OTHER PROPOSED VOLUMES IN THE SERIES / CONTRIBUTIONS WELCOME:

- Haptic Computing Logic, Emotional Intelligence, Neurocognitive and Genetic Computing
- Diaphontaine Sets, Definability, Forcing and Computability
- Newer Developments on Computability, Languages, Sets, and Model Theory
- Economic Game Models and Predictive Analytics
- Epistemic Computing, Model Checking, Spatial Computing and Ontology Languages
- Content Processing, Intelligent Multimedia Databases, and Web Interfaces
- Agent Software Engineering, Heterogeneous Computing, and Model Transformations

ABOUT THE SERIES EDITOR

Dr. Cyrus F. Nourani has a national and international reputation in computer science, artificial intelligence, mathematics, virtual haptic computation, information technology, predictive analytics, economics game models, decision trees, and management sciences. He has many years of experience in the design and implementation of computing systems. Dr. Nourani's academic experience includes faculty positions at the University of Michigan-Ann Arbor, the University of Pennsylvania, the University of Southern California, UCLA, MIT, and the University of California, Santa Barbara. He was a Visiting Professor at Edith Cowan University, Perth, Australia, and a Lecturer of Management Science and IT at the University of Auckland, New Zealand. His more recent years engagements are research professor at SFU Burnaby, British Columbia, Canada, and TU Berlin, Germany. Dr. Nourani commenced his university degrees at MIT where he became interested in algebraic semantics. That was pursued with a category theorist at the University of California. Dr. Nourani's dissertation on computing models and categories proved to have novel mathematical foundations developments that were published from his postdoctoral times on at AMS, ASL, and European mathematics circles. He has taught AI to the Los Angeles aerospace industry and has authored many R&D and commercial ventures. He has written and co-authored several books. He has over 400 publications in management sciences, pure mathematics, computer science and has written on additional topics, such as AI, EC, decision trees, and predictive economics game modeling. In 1987, he founded Ventures for computing R&D. He began independent consulting with clients such as System Development Corporation (SDC), the US Air Force Space Division, and GE Aerospace. Dr. Nourani has designed and developed AI robot planning and reasoning systems at Northrop Research and Technology Center, Palos Verdes, California. He also has comparable AI, software, and computing foundations and R&D experience at GTE Research Labs .He has written over 15 invention disclosures on the above areas.

Please feel free to share this announcement with your colleagues.