

Call for Special Issue Papers: **Sustainable Solutions for Internet of Things Using Artificial Intelligence and Blockchain in Future Networks**

Deadline for Manuscript Submission: 31 October 2022

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Special issue information

The world is undergoing a thoughtful revolution with the arrival of the intelligent information era. The central realms accompanying smart living such as transportation, entertainment, healthcare and smart cities are projected to improve service quality assuring a high-end user experience. Future mobile networks are projected to foster the future of ubiquitously connected data-intensive intelligent society powered with complete automation by seamless integrating of all sorts of wireless networks spread over the ground, underwater, air and space; see, e.g., Ramasamy et al. (2021).

The modern networks must deliver better performance than previous generations to address the necessities of emerging services and applications. Of late, the Internet of Things (IoT) is revolutionizing the existing industry into smart infrastructure presented with advanced data-driven architecture; see, e.g., Jian et al. (2022). Nevertheless, with the insufficiency of spectrum resources, efficient resource management and sharing are crucial to achieving all these ambitious requirements. One possible technology to accomplish all this is the blockchain. Due to its inherent properties, the blockchain has recently attained an important position, which is of great significance for future networks. Blockchain technology has attracted significant attention attributable to the decentralization, transparency, spectrum resource abundance, inherent privacy and security, interoperability, confidentiality and emerging smart application domains including Industrial IoT and Industry X.0. Especially the integration of the blockchain in 6G has enabled the network to monitor and manage resource utilization and sharing efficiently; see, e.g., Almaiah et al. (2022).

Exploration of blockchain has been emerging in the artificial intelligence (AI) platform to gather sensor data with the support of high-performance computing networks. The conventional process encompasses a set of data in a centralized manner and henceforth heterogeneous data from the various sources are accumulated in the server, leading to central issues in communication. AI-based methods can enhance the privacy and security issues in the modern wireless paradigm; see, e.g., Nguyen et al. (2021). AI-based approaches also improve the smart systems' connectivity with increased network capacity, quality of service, network availability and user experience. In blockchain, each miner has plenty of computing resources, which could be used for AI training, and smart contract services of blockchain will diminish the overall costs of smart applications. AI and blockchain have the potential for dynamic resource management and mobility management in the 6G network; see, e.g., Amjad et al. (2022).

This special issue aims to bring together foremost researchers in academia and engineering from various backgrounds to disseminate to the technical community an outline of emerging technologies, advanced architectures, challenges, open issues and future directions of modern networks in AI, IoT, and blockchain-based applications.

The potential topics include but are not limited to the following:

- Sustainable blockchain for network security and communication,
- Wireless blockchain sensor network,
- Health blockchain for IoT network optimization,
- Artificial intelligence and blockchain in advanced network communication,
- Deep learning with blockchain for network security,
- Socio technology with blockchain,
- Blockchain for big data networks,
- Blockchain computer vision,
- Blockchain for environmental sustainability,
- Internet of medical things with blockchain,
- IoT in medical diagnosis using blockchain framework,
- Blockchain model in intelligent medical diagnosis,
- Supervised, unsupervised and reinforcement learning using blockchain models.

Information about special issue editors



Venkatachalam Kandasamy has more than 14 years of academic experience and is currently working as a senior researcher at the Faculty of Science, University of Hradec Kralove, Czech Republic. He received his Bachelor's degree in Information Technology in 2005, Master's in Computer Science and Engineering in 2008, and Ph.D. in Computer Science and Engineering in 2018. He has published several articles in peer-reviewed journals and his research interest includes data mining, web services, semantic web services, distributed computing and cloud computing. He is a Sun Certified SCJP professional and has obtained Brain Bench certification in various disciplines. He has organized several workshops on J2ME, advanced Java programming, web services, enterprise computing, web technology and wireless sensor networks. He has guided a number of research-oriented as well as application-oriented projects organized by well-known companies such as IBM. He has delivered more than 20 guest lectures on various topics at reputed engineering colleges.



Mohamed Abouhawwash is an associate professor at the Department of Mathematics, Faculty of Science, Mansoura University, Egypt. He received his Master's and Ph.D. degrees in statistics and computer science from Mansoura University, Egypt, in 2011 and 2015, respectively. He is a research associate at the Institute for Quantitative Health Science & Engineering, Michigan State University, USA. His current research interests include evolutionary algorithms, machine learning, image reconstruction and mathematical optimization. Dr. Abouhawwash was a recipient of the Best Master's and Ph.D. thesis awards from Mansoura University in 2012 and 2018, respectively.



Nebojsa Bacanin is an associate professor and a vice-dean at the Faculty of Informatics and Computing, Singidunum University, Belgrade, Serbia. He received his Ph.D. degree from the Faculty of Mathematics, University of Belgrade in 2015. He started his university career in Serbia 13 years ago at the Graduate School of Computer Science in Belgrade. He is involved in scientific research in the field of computer science and his specialty includes stochastic optimization algorithms, swarm intelligence, soft-computing and optimization and modelling, as well as artificial intelligence algorithms, machine learning, image processing and cloud and distributed computing. He has published more than 120 scientific papers in high-quality journals and international conferences indexed in Web of Science and Scopus. He has also published two books in the domains of cloud computing and advanced java spring programming. He actively participates in one national and one international project in the domain of computer science. He has also been included in the prestigious Stanford University list with 2% of best world researchers for the year 2020.

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Important dates:

Deadline for manuscript submissions: **31 October 2022**

Notification to authors within four weeks.

Special issue will be published in December 2022.

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Relevant references

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