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Editorial

GUEST EDITORIAL
THEMATIC ISSUE ON BLOCKCHAIN TECHNOLOGIES AND APPLICATIONS

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The development of digital technologies is changing the way of exchanging information among people. In modern e-business ecosystems data and information are traded intensively. Problems related to safety, security and privacy in the management of business transactions are emerging. In response to these challenges, blockchain emerges as a transformative solution, offering a decentralized, immutable, transparent, and secure ledger that impeccably records all monetary transactions. Rooted in a distributed database of encrypted data, blockchain ensures integrity and resilience against tampering or replication. The key attributes of blockchain technology encompass decentralization, anonymity, auditability, security, increased capacity, transparency, reliability, and immutability. Thematic issue Facta Universitatis, Series Electronics and Energetics "Blockchain Technologies and Applications" focuses on the profound impact of blockchain technologies on diverse domains such as E-business, Industry 4.0, Metaverse, Software engineering, Digital banking, Fintech, Risk management, Healthcare, Sport, Ecology. This thematic issue dedicated to blockchain presents innovative e-business models and ecosystems based on blockchain technologies [1][2], development of blockchain infrastructure [3][4], and its seamless integration with complementary technologies like Cloud Computing, Big Data [5], NFT [6], Artificial Intelligence [7][8], Machine Learning [9]. Findings and discussion of the thematic issue should improve the research and development potential in the academic, industry, and business environments.

The following papers explore the application of blockchain technology in supply chain management across diverse industries, addressing readiness assessments, innovative business models, and challenges of implementation. The first paper, titled "Stakeholders' Readiness for Adopting Blockchain in the Fashion Industry," systematically examines the readiness of fashion industry stakeholders for adopting blockchain. It assesses readiness, identifies barriers, and proposes an innovative blockchain application model in the supply chain of the fashion industry. The subsequent pair of papers, "Testing Readiness of Adoption of

Blockchain Technology in Tracking the Authenticity of Organic Coffee" and "Assessing the Adoption and Utilization of Blockchain Technology among Software Developers," delves into the examination of blockchain adoption in specific domains. Both studies contribute insights into the dynamics of blockchain integration in distinct contexts, offering valuable perspectives for industry stakeholders and researchers alike.

The paper "Methodology of Creating NFT Fashion Projects" aims to clarify misconceptions about non-fungible tokens (NFTs) and their varied applications. It proposes a methodology for NFT fashion projects, demonstrating the modeling of a fashion ecosystem based on NFTs and providing a practical example of NFT collection creation using a smart contract developed in the PyTeal programming language on the Algorand blockchain platform.

The next paper "Improving attractiveness of frontier markets using blockchain technology" explores smart contracts, their functioning, and prevalent platforms, proposing a model for a blockchain-supported junior stock market. The next two papers fall into the category of exploring the revolutionary influence of blockchain technology within the banking sector. The first paper, "Revolutionising the Document Workflow Using Blockchain in the banking sector," focuses on leveraging blockchain to enhance the efficiency, security, and privacy of workflow processes in banking. The proposed method integrates Alfresco DMS, CMIS, and Camunda for workflow management, with additional security provided by Factom Blockchain's notary. The paper "Blockchain and Outsourcing for Specialised Banking Communities," delves into the potential benefits of implementing blockchain technology and outsourcing contracts within specialised banking communities in Russia.

The paper "Towards Decentralized Resource Management for Disasters: NGO-RMSD" proposes a blockchain-based decentralized system, NGO-RMSD, designed to improve collaborative efforts in disaster response. The paper titled "Blockchain: Balance of Anonymity and Security" aims to provide a comprehensive overview of the challenges associated with balancing anonymity and security in the utilization of blockchain technologies.

The following paper, "A Bibliometric Overview of Blockchain Technology in Sports," concludes by contributing valuable insights to both academic knowledge and practical applications, offering a comprehensive snapshot of the current state and trends of blockchain technology within the sports domain. The paper, "AI and Blockchain Framework for Healthcare Applications," explores the convergence of AI and blockchain in healthcare. It delves into societal implications while providing practical contributions, including the evolution of best practice guidelines and the introduction of a systematic development framework known as AI-BlockchainOps. Focusing on electric energy consumption and its CO2 emission footprint, this paper titled "The Impact of Blockchain Technology on the Environment" delves into the central theme of how blockchain technology affects the environment.

The last two papers, "A Comprehensive Comparative Study of Machine Learning Models for Predicting Cryptocurrency" and "A Study on Bitcoin Price Behavior with Analysis of Daily Bitcoin Price Data," both fall within the category and scope of fintech and cryptocurrency exploration. In the former, various cryptocurrencies undergo comprehensive analysis using different machine learning models, revealing the absence of a singular model consistently outperforming others. The latter paper focuses on Bitcoin, acknowledging the challenges associated with attributing specific changes to identifiable reasons within the dynamic realm of cryptocurrencies.

Finally, we would like to take the opportunity to thank the authors and reviewers for their endeavors. Without great efforts from them, this thematic issue could not have been made. We would also like to thank the Editor-in-Chief, Professor Danijel Danković for the opportunity to edit this thematic issue and all his support throughout the editing process.

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