Managing Editor's Column

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Dear Readers,

It gives me great pleasure to announce the fifth regular issue of 2026. I would like to thank all the authors for their sound research papers and the editorial board and our guest reviewers for their extremely valuable reviews and suggestions for improvement. These contributions and the generous support of the KOALA consortium members enable us to run our journal and maintain its quality. I would also like to thank our broader community for reading and incorporating sound J.UCS papers into their research.

We are interested in receiving high-quality proposals for special issues on new topics and emerging trends; in particular strong international collaborations on current topics are highly welcome.

In this regular issue, I am very pleased to introduce 4 papers by 17 authors from 3 countries: Brazil, China, Türkiye.

Ozan Can Acar and Hürevren Kılıç from Türkiye investigate in their research whether competition among goal-driven agents can enhance the quality of pseudo-random number generation and proposes an agent-driven gamification framework built on a two-dimensional linear cellular automata environment. NIST test results and statistical analyses demonstrate that incorporating rational agents with conflicting objectives improves statistical randomness, with most configurations achieving near-optimal benchmark scores and outperforming environment-only setups.

Vívian Santos Marques Severino, Lílian Santos Marques Severino, Edna Dias Canedo, and Gilmar dos Santos Marques from Brazil analyze in their research predictions made at the end of the 20th century regarding social, economic, and technological transformations of the 21st century—particularly in the early stages of artificial intelligence—through a qualitative, exploratory, and comparative approach based on bibliographical and documentary research. It verifies which theses from thinkers like Bauman, Castells, Rifkin, Schwab, Chomsky, Nicolelis, Harari, Kahneman, and Acemoglu were confirmed or refuted globally and in Brazil during the first quarter of the 21st century, offering insights for innovative policies, strategies, and future studies on trends like automation, inequality, and AI governance.

Guohui Liu, Huan Zhang, Jianghong Li, Yanling Zhao, and Xin Liu from China propose in their article an enhanced Wavelet-TimesNet model that integrates adaptive wavelet transform and multi-scale residual networks. By dynamically adjusting the parameters of wavelet basis functions, constructing multi-scale residual networks, and introducing an adaptive wavelet attention mechanism, the model can effectively suppress noise interference and accurately capture both local detailed features and global variation trends of photovoltaic power sequences.

Last but not least, Kevin Lima, Alex Roehrs, Cristiano André da Costa, Rodrigo da Rosa Righi, Jorge Luis Victória Barbosa, and Kleinner Silva Farias de Oliveira from Brazil focus their research on noninvasive digestive health monitoring by proposing the Mathematical Formula for Systematic Digestive Sounds (MFSDS), an approach that converts abdominal audio signals into mathematical formulas for automated analysis using IoT, signal processing, and artificial intelligence. The study shows that MFSDS can identify recurring patterns in digestive sounds, achieving similarity rates between 50% and 67% across different experimental settings, and highlights the potential of mathematical modeling as a novel direction for real-time gastrointestinal monitoring and preventive healthcare.

Enjoy Reading!

Best regards,

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