Managing Editor's Column

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Dear Readers,

It is a great pleasure to announce the eighth J.UCS issue of 2026. As always, I would like to thank all the authors for their sound research and the editorial board and guest reviewers for the extremely valuable reviews and suggestions for improvement. These contributions together with the support of the community and the generous support of the KOALA initiative enable us to run our journal and maintain its quality.

I continuously like to expand our editorial board to cover all aspects and trends in computer science. If you are a tenured associate professor or above with a good publication record, please apply to join our editorial board. We are also interested in high-quality proposals for special issues on new topics and emerging trends.

In this regular issue, I am very pleased to present 6 accepted papers by 26 authors from 8 countries: China, Indonesia, Irak, Iran, Spain, Türkiye, United Kingdom, USA.

In a collaboration with researchers from Spain and the UK, Guadalupe Ortiz, Javier Tena, Adrian Garcia-Bermejo, Alfonso Garcia-de-Prado, and Stephan Reiff-Marganiec address the lack of Complex Event Processing (CEP) solutions for resource-constrained microcontrollers (MCUs) by introducing MicroCEP, an open architecture with a lightweight CEP engine, a pattern language, runtime reconfiguration, and a deployment methodology for edge devices. The proposed approach enables real-time event correlation and autonomous decision-making on MCUs, and experimental results demonstrate its feasibility, low resource consumption, and effective collaboration across multiple edge devices.

Juana María Morcillo Martínez, José Luis López Ruiz, David Díaz Jiménez, María Mercedes Párraga Vico, and Macarena Espinilla Estévez from Spain present a mixed-methods study that analyzes the acceptance of non-invasive wearable technologies for elderly care through focus groups and surveys with future social and healthcare professionals, evaluating a privacy-oriented system that excludes cameras and microphones. The findings demonstrate that acceptance depends on discretion, transparency, person-centred design, and human support, while economic cost and the digital divide emerge as the main barriers, emphasising the need for participatory and ethical design in ageing-in-place technologies.

In a collaboration between researchers from the USA and China, Jiangke Wu, Xiaojun Chen, and Rongxing Shi address in their research the resource inefficiency and potential data discrepancies caused by passive post-failure compensation in traditional microservice Saga transactions. In this light, the paper introduces the Proactive Saga Failure Avoidance (PSFA) framework, which embeds an LSTM-based health prediction model into the Saga orchestrator to evaluate real-time service metrics and detect failures prior to transaction execution. Experimental evaluations demonstrate

that the PSFA framework identifies failure precursors with 1.00 precision and 0.99 recall, successfully establishing a practical proactive fault-tolerance approach that shifts distributed transaction management from reactive compensation to pre-fault avoidance.

In another collaborative research from Iran and Iraq, Nabeel Abdolrazagh Yaseen Alrashedi, Rasool Sadeghi, Wael Hussein Zayer Al-Lamy, Mehdi Hamidkhani, and Reihaneh Khorsand look into the problem of energy-efficient cooperative data offloading in heterogeneous cellular networks and propose a deep Q-network-based multi-agent reinforcement learning framework that enables mobile users to learn adaptive offloading strategies across cellular, Wi-Fi, and device-to-device communications. The proposed method significantly reduces energy consumption while also improving delay, throughput, and fairness, achieving up to 40% energy savings over random offloading and 16.6% over greedy offloading in the reported experiments.

Zulkifli Zulkifli, Fitriana Fitriana, and Panji Bintoro from Indonesia present their study on a web-based system for predicting heart failure patient survival by integrating five machine learning algorithm Naive Bayes, Random Forest, K-Nearest Neighbor, Support Vector Machine, and Neural Network using clinical patient variables. The proposed system achieved its best reported performance with Naive Bayes and provides a practical multi-algorithm platform to support healthcare professionals in heart failure monitoring and survival prediction.

And last but not least, Ela Kalifati, Kerem Küçük, Şevval Şolpan, Kazım Kıvanç Eren, and Mehmet Zeki Konyar from Türkiye propose in their article a device-level SMOTE-based class balancing approach. It compares KNN, SVM, Logistic Regression, and MLP on seven IoT devices from the ToN_IoT dataset, in order to address the class imbalance that causes machine learning models to overlook rare intrusion classes in IoT attack detection. Results show that SMOTE markedly improves minority-class recall and F1-score on severely imbalanced devices, with only marginal effects where the data are already balanced, demonstrating that selective oversampling with classical classifiers is an efficient path to robust multi-class IoT intrusion detection.

Enjoy Reading!

Cordially,

Christian Gütl, Editor-in-Chief
Graz University of Technology, Graz, Austria
Email: c.guetl@tugraz.at