CIT. Journal of Computing and Information Technology, Vol. 30, No. 2, June 2022, i–ii
doi: 10.20532/cit.2022.1005661

Editorial

The June 2022 issue (Vol. 30, No. 2) of *CIT. Journal of Computing and Information Technology* brings four papers from the areas of network security, natural language processing, intelligent control systems, and software engineering.

The first paper in this issue, *A Prey-Predator Defence Mechanism for Ad Hoc On-Demand Distance Vector Routing Protocol*, deals with the topic of improving security of wireless network protocols. The authors, Abiodun Akinwale, Emmanuel Ajayi Olajubu, and Ganiyu Adesola Aderounmu, consider the Ad hoc On-demand Distance Vector (AODV) protocol, explore its vulnerability to several types of attacks, and propose a nature-inspired, prey-predator communal defence algorithm for intrusion detection. The mathematical model simulation is performed using MATLAB while performance testing is done using the OMNET++ tool. Performance testing includes a comparison of standard AODV protocol, AODV protocol under attack, and AODV protocol with the proposed communal defence algorithm. Simulation results show that the security mechanism embedded in OADV does not add too much load on the routing protocol, the network is mostly accessible during the attacks, and the attacks are nullified within a short time period. Additionally, the proposed method delivers better results in terms of packet delivery ratio, load, and delay compared to related work.

Online learning systems bring significant opportunities but also impose new challenges. One of the challenges is the automatic essay scoring (AES), a natural language processing (NLP) task which often results in suboptimal accuracy. In the paper titled *Development of an Automated Scoring Model Using SentenceTransformers for Discussion Forums in Online Learning Environments*, the authors Bachriah Fatwa Dhini and Abba Suganda Girsang propose a new approach for AES that is used on short essays coming from Indonesian educational forums. The approach is based on SentenceTransformers, an NLP transformer-based Python library with multiple language models from the HuggingFace repository that efficiently calculates vector representations from text, while taking language context into account. The presented study evaluates several multilingual SentenceTransformer models and shows that some of them perform well in generating evaluation scores for the AES task, while achieving fast model processing time. The best multilingual model achieved 0.64 correlation and 0.7 mean average error on AES, improving on the results of Indonesian-specific language models.

In their paper titled *Predictive Control of an Intelligent Energy-saving Operation System Based on Deep Learning*, Yongfang Lu and Xiaofang Lu deal with the topic of intelligent process control with the aim to produce energy savings. They observe that the existing research methods for intelligent process control are not accurate enough to predict energy-saving operations for systems where numerous devices are involved. Instead, they propose a deep learning model, denoted as Generalized Regression Neural Network (GRNN), to serve as the prediction model for the control of the intelligent energy-saving operation system. An improved version of the Beetle Antennae optimization algorithm that uses dynamic adaptive weighting and the Levy flight strategy is proposed to optimize the smoothing factor for GRNN, hence influencing the degree of its model fitting. Using the proposed methods, the authors achieve an electricity cost reduction rate of 11.85%, which is a significant improvement over the related work.

In the last paper of the issue, titled *Investigating the Role of Critical Success Factors in Achieving the Success of Agile Projects in the Gaza Strip*, a literature review was conducted to identify critical success factors in agile project management. The author, Yousef A. Yousef, evaluates critical success factors using regression analysis. The critical success factors were grouped into 10 categories and linked to corresponding references. Based on a 52-question survey of 109 project managers in the Gaza strip, the author matches the critical success factors with the following project outcomes: timeliness, cost, quality, and customer satisfaction to show which factors influence project success the most. Two factors: scope and cost management, and planning and scheduling stand out, explaining a total of 67.7% of the variation in project outcomes. Although the analysis was conducted in the Gaza strip, using the approach proposed in the paper as a starting point, a similar approach can be applied in other regions of the world.

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Editor-in-Chief