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# Editorial

The June 2025 (Vol. 33, No. 2) issue of *CIT. Journal of Computing and Information Technology* brings four papers from the areas of network security, 3D modeling, brain-computer interaction, and recommendation systems.

The first paper in this issue, titled *A Hybrid CNN-LSTM Framework with Federated Learning for Enhanced Power Grid Intrusion Detection*, deals with an important topic in network security. The authors of the paper, Songyao Feng, Mingfei Zeng, Zhengyan Huang and Weigang Su propose a novel intrusion detection model for smart power grids that combines Federated Learning (FL), Convolutional Neural Networks (CNN), and Long Short-Term Memory (LSTM) to address the issues of large amounts of data and low accuracy of traditional approaches. By integrating CNN and LSTM, the model effectively captures spatial and temporal features of power grid data, enhancing its ability to detect complex intrusion behaviors. The use of FL enables distributed training across grid nodes while preserving data privacy and improving robustness. The model achieves high performance on the benchmark KDD Cup 99 intrusion detection dataset, with 97.3% accuracy, 97.7% precision, 90.8% recall, and 91.1% F1 score, while maintaining low loss rate and communication costs. However, the study notes limitations regarding the model performance on small datasets, dependency on data quality, and potential privacy risks in real-world FL deployment.

In the paper, titled *3D Facial Modeling Based on Multi-scale Feature Fusion and Lighting Robustness*, the author Hongyan Zhu deals with 3D modeling and proposes a method that combines multiscale feature fusion and lighting robustness optimization to address limitations in current 3D facial modeling technologies, particularly for weak texture areas and under complex lighting conditions. The method leverages two key network structures: Multiscale Dense Feature Network (MSDF-Net) for feature extraction and Illumination-Robust Feature Fusion Network (IRFF-Net) for enhancing illumination robustness through advanced feature fusion techniques. Experimental results on BU3D-FE and 3DFAW datasets show strong performance, with structural similarity index of 0.954, mean absolute error of 0.63 mm, and feature consistency of 0.941 under dynamic lighting. Real-world testing confirmed the method's improved accuracy (up to 92.8% in security monitoring) and efficiency (36 FPS), demonstrating the method's practicality. Current challenges include real-time performance and extreme lighting conditions.

The Internet of Medical Things (IoMT) offers promising potential for enhancing patient care in telemedicine. In this context, a combination of machine learning with EEG may be used in different scenarios for improving diagnosis and quality of life. In the paper, titled *EEG Signal Classification Using Bayesian-Optimized Neural Networks in IoMT Systems*, the author Rana Raad Shaker Alnaily proposes an EEG signal classification method using a Backpropagation Neural Network (BPNN) optimized with a Bayesian Optimization Algorithm (BOA), designed for IoMT applications. The approach addresses common challenges in EEG analysis, such as low accuracy, high noise, and computational inefficiency. By leveraging BOA, the model effectively tunes hyperparameters, avoids local minima, and accelerates training convergence. The method was tested in the brain-computer interface context using the BCICIV2a dataset, achieving a high classification accuracy of 93.21% when discerning four motor imagery tasks. Compared to related work, the model demonstrated better performance in terms of speed, reliability, and simplicity, which makes it suitable for the use in remote medical diagnostics.

In the last paper of the issue, titled *Temporal-Aware Neural Networks for Balancing Dynamic Preferences and Long-Term Interests in Recommendation Systems*, the authors Yanting Xia, Lin Zhang, Zhou Yang, Chichen Zhang, and Ting Guo deal with the topic of intelligent recommendation systems. They propose Temporal-Aware Neural Recommender (TANR), a recommendation framework designed to balance users' dynamic short-term preferences and stable long-term interests. TANR utilizes a time-aware Transformer architecture with a logarithmic time decay mechanism embedded in the attention layers to dynamically weigh user interactions based on recent interactions. The model employs a hybrid training strategy, combining offline pre-training for long-term patterns with online incremental updates for real-time adaptation. Evaluated on the well-known recommendation datasets, MovieLens-1M and MIND, TANR significantly outperforms existing methods based on the model evaluation measures like Hit Rate, NDCG, and MRR, particularly excelling in capturing temporal behavior patterns. Despite its success, the model's computational cost and reliance on fixed decay functions are noted as areas for possible improvement in future work.

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