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Editorial Note

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Description

This is the second volume of the first issue of the African Journal of Computing, Data Science and Informatics (AJCDI), which aims to cover research efforts in the fields of Computer Science, Data Science, and Informatics. The journal seeks to establish a new integration of these three different disciplines to create a continuous multi-disciplinary dialogue. This issue captures various perspectives from across the African continent on topics related to Computer Science, Data Science, and Informatics. Numerous manuscripts were submitted for consideration for publication in this second volume; however, the journal could not accommodate all submissions due to factors such as readiness and relevance. As is standard, the journal adheres to a double-blind peer review process and an open peer review process, resulting in the selection of five standout manuscripts for publication in this issue.

The first paper analysed the detection of fake news in the Hausa Language, employing a Machine Learning-Based Model. The main objective of the study was to address the critical challenge of detecting fake news in Hausa, a major West African language, spoken by over 70 million people. A Hybrid Machine Learning framework, alongside a transformer HausaBERT was proposed. The study concludes that the model achieved an accuracy of 95.7 %, precision of 94.8%, recall of

96.2%, presenting a significant improvement over the previous benchmark of 85% accuracy.

The second paper examined how Artificial Intelligence (AI) adoption could aid in bank fraud detection and prevention in Zimbabwe. The main objective of the study was to investigate the critical factors affecting the Artificial Intelligence applications used for fraud detection. The findings revealed that banks in Zimbabwe primarily utilise AI automated chatbot fraud alerts, anomaly detection, and real-time transaction monitoring. It was revealed that there were significant barriers to AI adoption, including inadequate technological infrastructure, skills gap, funding constraints, organizational resistance, and the influence of traditional beliefs. It was recommended that development of context-specific AI frameworks that integrate African Ubuntu principles, should be adopted, other than sorely relying on imported model.

The third paper presents a maxim that predicts that predictive maintenance (PdM) is a key enabler of smart manufacturing, driven by widespread deployment of sensors, and the adoption of Industry 4.0 technologies. The study addressed practical challenges such as class imbalance, limited interpretability, and deployment constraints. Performance was assessed using imbalance-aware metrics, which include Accuracy, Precision, Recall, F1 Core, ROC-AUC, and Matthew's Correlation Coefficient (MCC).

It was concluded that high accuracy alone is insufficient for PdM applications, as Logistic Regression and SVM exhibited poor failure detection, despite having strong accuracy.

The fourth paper explained how integrating agentic artificial intelligence into knowledge management can be used to enhance customer experience. The main objective was to explore integrating agentic artificial intelligence with knowledge management. A scoping review to explore integration in the financial services sector was carried out by examining 26 articles. It was revealed that AI-driven knowledge retrieval and contextualization enable personalization at scale. It was concluded that agentic AI and Knowledge Management are mutually reinforcing in transforming customer experience in financial services.

The fifth paper introduces growing demand for Deep Learning for the Image Classification of Leukemia Using Convolutional Neural Network (Cnn), and highlights the need for early diagnosis for adequate treatment. The conventional diagnostic procedure is often expensive and time-intensive, requiring the involvement of medical specialists and a battery of tests. Consequently, the development of an automated

diagnostic system capable of precise prediction holds considerable importance. This study introduces a deep learning model, leveraging a Convolutional Neural Network (CNN), for the image classification of leukemia datasets. Its primary objective is to significantly boost the accuracy of identifying and predicting diverse leukemia subtypes, guaranteeing pristine, pre-processed data crucial for optimal categorization. Implemented in Python, with PHP for server-side functionality and MySQL for data management, the resulting application featured a structured user interface encompassing user registration, image submission, CNN-driven feature extraction and classification, and final image interpretation. The solution achieved 99.4% accuracy, classifying leukemia types with deep learning.