Foreword

Welcome to the fourth issue of 2024 for the Pertanika Journal of Science and Technology (PJST)!

PJST is an open-access journal for studies in Science and Technology published by Universiti Putra Malaysia Press. It is independently owned and managed by the university for the benefit of the world-wide science community.

This issue contains 25 articles; three review articles and the rest are regular articles. The authors of these articles come from different countries namely Australia, Brazil, India, Indonesia, Iraq, Malaysia, Philippines, Russian Federation and the Kingdom of Saudi Arabia .

The article "Borderline-DEMNET: A Workflow for Detecting Alzheimer's and Dementia Stage by Solving Class Imbalance Problem" by Neetha Papanna Umalakshmi et al. from India presents a new workflow called Borderline-DEMNET. This workflow is designed to classify various stages of Alzheimer's/dementia with more than three classes and employs Borderline-SMOTE to address the issue of imbalanced datasets. The robustness of the work is checked using the ADNI dataset, and the results are impressive. The proposed workflow achieves an accuracy of 99.17% for the Kaggle dataset and 99.14% for the ADNI dataset, demonstrating the high reliability of the research. The article provides detailed information on this study on page 1629.

Mohd Sophian Mohd Kasihmuddin and Zaidi Che Cob from Universiti Kebangsaan Malaysia studied the diversity and dominance of macrobenthos in Johor Straits, Malaysia. Seven hundred thirty macrobenthic individuals and 46 known taxa were identified in sediments of 13 locations in the strait. Annelids Prionospio (n=295), Minuspio (n=95) and Mediomastus (n=82) were concentrated in the central zone. Molluscs dominated the Merambong Shoals area (Arcualuta, n=66), and amphipods dominated waters off Santi River (Leucothoe, n=26; Gammarus, n=11; Cymadusa, n=9). PERMANOVA analyses showed significant differences in benthic taxa composition, while BIOENV analyses highlighted water acidity, chlorophyll-a, silts and total organic carbon. The principal component analysis graph indicated higher organic carbon and silts in the central area, implying favorable conditions for Sedentarian polychaetes to thrive. The east and west ends of the strait exhibited higher readings of water acidity and chlorophyll-a, which may directly contribute to a higher diversity of benthic communities in the areas. Lower oxygen levels in two locations in the central area (J3=2.97 mg/L, J4: 2.63 mg/L) exhibited Sedentaria polychaete-dominated region, but zero benthic organisms in another part of the central area (J5-J9, 2.97–0.99 mg/L). Further details of the article are available on page 1829.

The article titled "Simulating Spanning Tree Protocols in a Cable-Based Tsunameter System with an Arbitrary Number of Ocean Bottom Units" by Mohammad Hamdani and colleagues from Indonesia, presents a scalable simulation framework of the Indonesia cable-based tsunameter (INA-CBT) system. The primary aim of their research is to use Layer 2 open protocols such as

spanning tree protocol (STP) and rapid spanning tree protocol (RSTP) as an early warning system to mitigate the impact of disasters. The practical implications of their work are significant, as the proposed model has been successfully scaled up to ten ocean bottom units (OBUs) with a ring topology. The experimental results show that the convergence time values in failover and failback scenarios are still below the system requirement of INA-CBT. As expected, RSTP shows a faster convergence time than STP, but one should be aware of the possible RSTP downtime fluctuations depending on the number of OBUs deployed. The article provides detailed information on this study on page 1875.

We anticipate that you will find the evidence presented in this issue to be intriguing, thought-provoking and useful in reaching new milestones in your own research. Please recommend the journal to your colleagues and students to make this endeavour meaningful.

All the papers published in this edition underwent Pertanika's stringent peer-review process involving a minimum of two reviewers comprising internal as well as external referees. This was to ensure that the quality of the papers justified the high ranking of the journal, which is renowned as a heavily-cited journal not only by authors and researchers in Malaysia but by those in other countries around the world as well.

We would also like to express our gratitude to all the contributors, namely the authors, reviewers, Editor-in-Chief and Editorial Board Members of PJST, who have made this issue possible.

PJST is currently accepting manuscripts for upcoming issues based on original qualitative or quantitative research that opens new areas of inquiry and investigation.

Chief Executive Editor
Mohd Sapuan Salit
executive_editor.pertanika@upm.edu.my