Foreword

Welcome to the first issue of 2023 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 35 articles; eight review articles; a case study; a short communication and the rest are regular articles. The authors of these articles come from different countries namely Afghanistan, Bangladesh, China, India, Indonesia, Iran, Japan, Kingdom of Bahrain, Lesotho, Malaysia, Nigeria, Pakistan, Philippines, South Africa and Zimbabwe.

The next article discussed the blade fault localization method centered on time-frequency feature extraction and a machine learning approach. The experiment found that both feature sets can localize the blade fault position. In addition, the classification results too revealed that the Genetic Algorithm-based feature selection method could eliminate unnecessary features and improve classification precision, including network generalization. Finally, the selected features of the statistical and newly proposed features were combined to enhance the diagnosis performance further. As a result, the classification rate for blade fault localization was 83.47%. Details of this study are available on page 51.

An investigation to predict daily air pollutants concentration and air pollutant index using a machine learning approach was conducted by Nurul A'isyah Mustakim and co-researchers from Universiti Teknologi MARA and Universiti Malaysia Perlis, Malaysia. The major air pollutants in Malaysia that contribute to air pollution are carbon monoxide, sulfur dioxide, nitrogen dioxide, ozone, and particulate matter. Predicting the air pollutants concentration can help the government to monitor air quality and provide awareness to the public. This study focuses on an industrial, the Petaling Jaya monitoring station in Selangor. Predictive modeling that can predict the air pollutants concentrations for the next day using a tree-based approach was constructed. From comparing the three models, a random forest is the best-proposed model. Further details of the investigation can be found on page 123.

A regular article titled "Development of Flood Hazard Index (FHI) of the Kelantan River Catchment using Geographic Information System (GIS) based Analytical Hierarchy Process (AHP)" was presented by Zulkarnain Hassan and Ain Nihla Kamarudzaman. This study used the Kelantan River catchment's flood hazard index (FHI) based on the analytical hierarchy process (AHP) to identify and classify the flood occurrence. According to the AHP model, the annual rainfall was the first ranked parameter in terms of importance weight score. Moreover, Tanah Merah and Jeli were the high-risk areas for floods. Therefore, the present study suggests that the GIS-based AHP can be highly effective for mapping flood hazards and benefit flood management decision-making. Detailed information on this study is available on page 203.

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
Professor Ir. Dr. Mohd Sapuan Salit
executive_editor.pertanika@upm.edu.my