Editorial

Dear Colleague:

Welcome to volume 28(2) of the Intelligent Data Analysis (IDA) Journal.

Dear reader, welcome to this second issue of our 28th year of the IDA journal. This issue includes a good selection of articles covering different topics linked and related to Intelligent Data Analysis. This isues contains some articles originally collected for special issue on "*Image Mining And Knowledge Discovery For Business Applications*" organized by Dr. A. Shanthini, Dr. Gunasekaran Manogaran, and Dr. Priyan Malarvizhi Kumar. A selection of this paper are fianaly part of this regular issue of the journal.

The first half of the issue covers the usual range of applied and theoretical contributions and the second part corresponds to those publication, originally addressed to the special issue that we have collected in this regular issue.

We begin the first half of the issue with a block containing several multimodal data analysis methods. For instance, the first paper by Li et al. present a new image classification algorithm for remote sensing images using a varient of convolutional neural networks. This network includes a new type of image processing blocks (Squeeze & Excitation) that scales each pixel value in the feature map to the same scale and converts it into a one-dimensional vector and then calculates the weight of each pixel based on the receptive field. In the second paper, Chen et al. propose an interesting new algorithm to determine outliers in trajectory data, in particular using group division. The method defines a series of grid structures that translates trajectories into a sequence of grid codes and densities to create the source dataset for outlier detection and to establish trajectory deviations. This first block concludes with the third contribution by Yang et al. in which the authors propose a new algorithm for recommendation systems based on user reviews. This approach leverages an asymmetric multilevel iterative attention network to construct user and item features using document-level and review-level data and model them with a multilevel approach.

The second group of papers involve graph, networks and routing applications. In the first of these papers, Ying et al. present a new methodology for the estimation of effort in software development projects using machine learning. The proposed methodology uses development-centric features analyzed by a Graph Convolutional Network with multi-head attention mechanism in conjunction with a BiLSTM to analyze the sequential features for each graph. The second paper of this group, Wasim et al. proposes an interesting method for predicting missing links in networks that combines both shortest path characterization and the analysis of topological features, which implies the use of local and global similaries as the driver of the forecasting technique. In the third paper, Zhang et al. introduce us to an interesting application in logistics of multi-objective optimization algorithms for vehicle routing with time windows. The proposed optimization algorithms is based on differential evolution using a generalized opposition-based learning strategy is used to generate a reverse population.

The last group of papers of this first part of the issue covers an interesting and very relevant topic in the handling of healthcare and other related emenergencies. First, Decoupes, et al. introduce a new algorithm for the monitoring events such as natural disasters and public health emergencies that produces a lot of text-based data that this algorithm enriches with geospatial information using a novel data augmentation techniques. The proposed methodology integrates this spatial information into a new text label to enable

NLP-based analysis. The second contribution, Qiu & Huang, present an analysis of social media data related to the impact of COVID-19 blockade policy on the public mood and the concerns expressed by the public about policies changes, and the interaction between policies and epidemic states at different stages of the epidemic. The study reveals the changes in public attention and attitudes in the two regions under study during the epidemic and reflects the differences in public sentiment between the two regions, as well as the correlation between emotions and policies and epidemic trends when different policies are adopted under different circumstances.

The second part of this issue corresponds to the beforementioned papers originally submitted for the "*Image Mining And Knowledge Discovery For Business Applications*" but I left their guest editors to introduce them.

With our best wishes,

Dr. A. Famili   **Dr. J.M. Peña**
Founder   *Editor-in-Chief*

Dear Esteemed Reader,

The following papers were originally submitted to the special issue on "*Image Mining And Knowledge Discovery For Business Applications*" but there have been finally included in this 28 (2) regular issue.

In this section, you will discover a compilation of six articles, each delving into various facets of both theoretical and practical research within the realm of Intelligent Data Analysis. I would like to extend my heartfelt appreciation to the Editor-in-Chief, whose unwavering dedication has played a pivotal role in shaping this edition. His efforts have culminated in the integration of a dedicated special issue into our regular publication, enriching the diversity of content and perspectives presented herein. This thematic coherence has significantly contributed to the cohesive and harmonious character of this edition, making it a truly immersive and enlightening experience for our readers. We look forward to your feedback and hope that the insights shared within these pages propel you further into the fascinating world of Intelligent Data Analysis.

In the first article authored by Mustafa Musa Jaber et al., blockchain technology is proposed as a solution, offering traceability, transparency, and security benefits. This framework aims to enhance supply chain performance and sustainability by disrupting processes through improved finance handling, distributed management, and automation. The study's experimental results support the effectiveness of this approach, achieving efficient computation times, high data management ratios, and data authentication rates, demonstrating the potential for intelligent business strategies in supply chain management.

In the next article M. Karthick et al., introduces an Empirical Probability assigned Satty's method integrated Multicriteria Decision-Making model (EP-Satty-MCDM) for enhancing the sales of low-influenced products through celebrity endorsements. The process involves secure data download, data cleansing, extraction of review and behavior attributes, correlation analysis using Interval-valued Atanassov intuitionistic fuzzy-based Mann-Whitney U test (IAF-MWU), semantic ontology construction, domain extraction, and product influence classification using Boosting Regression Tree-Recurrent Neural Network (BRT-RNN). Experimental results demonstrate that this approach achieves higher accuracy compared to existing methods. The next article by Qiulian Chen et al., the proposed algorithm combines iterative sequential value correction and beam search heuristics, emphasizing both the accumulation and reusability of leftovers to minimize material consumption. Cutting plans are created iteratively, with the best

one selected as the solution. Through simulations on various scenarios and instance sizes, the results demonstrate the effectiveness of these heuristics, providing better solutions that can significantly reduce plate waste and production costs over the long term for enterprises.

In the subsequent article authored by Chunjuan Gao et al., discusses the pressing issues of resource scarcity and environmental pollution in society, highlighting the need for sustainable development. It introduces the concept of the Closed-Loop Supply Chain (CLSC) as a solution to these problems, emphasizing its ability to balance economic growth with environmental protection. It concludes by suggesting that this algorithm could offer innovative solutions for the future development of Chinese enterprises, ultimately promoting sustainability.

In the final article, Sura Khalil Abd et al. the authors propose Statistical Business Models (SBM) to enhance the business strategies for developing the economy in smart cities. SBMs leverage the power of smart communities and involve data systems and business models to manage the economy effectively. The experimental results indicate that SBMs outperform existing methods, achieving high statistical rates in sales revenue, gross margin ratio, consumer satisfaction, efficiency, and maintenance cost ratio.

At long last, we extend our heartfelt appreciation to all the authors and reviewers for their invaluable and punctual contributions. We also wish to express our deep gratitude to the journal for granting us the privilege to organise a special issue.

With our best wishes,

Dr. A. Shanthini
Lead Guest Editor

Dr. Gunasekaran Manogaran
Co-Guest Editor

Dr. Priyan Malarvizhi Kumar
Co-Guest Editor