# Editorial

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**Biographical notes:** Zhenling Liu is an Associate Professor at the Marketing Research Department, Henan University of Technology. His research interests cover energy-economy-environment systems, energy economics, and sustainable development. He has been the guest editor of special issues for more than 10 journals and peer-reviewers of more than 30 times for different journals with two books published. Liu has been selected as keynotes speakers five times at international conferences. He is the Editor in Chief for the International Journal: *Adv. Indus. Eng. Manage*, and the Associate Editor: *Journal of Coastal Research* (IF = 0.79), with an H-Index of 21 and 5 Highly Cited Papers by Web of Science, Clarivate Analysis.

Simon Elias Bibri is Researcher and Assistant Professor in the area of data-driven smart sustainable cities of the future at NTNU, Department of Computer and Information Science and Department of Architecture and Planning, Trondheim, Norway. He is Editorial Board for Smart Cities, Urban Science, Energies, Environmental Integration, Sustainability, Sustainable Cities, Sustainable Cities and Society, and Land Journals. He has pursued a long academic journey by studying a range of subject areas at the intersection of science, technology, and society. His intellectual endeavours and pursuits have resulted in an educational background encompassing knowledge from various disciplines, namely computer science, engineering science, systems science, environmental science, as well as the social sciences.

Igor Calzada is Research Fellow at WISERD at Cardiff University School of Social Sciences leading the WP New Emerging Citizenship Regimes as well as Wales & Basque Country Cooperation programme. He has been awarded Fulbright Scholar-in-Residence (SIR) 2022–2023 by US–UK Fulbright Commission at California State University (USA). He has been nominated by Apolitical in the list of 100 Most Influential Academics in Government in 2021. His recent monographs entitled *Emerging Digital Citizenship Regimes: Postpandemic Technopolitical Democracies* published by Emerald (2022) and *Smart City Citizenship* by Elsevier (2021). Calzada has been selected as expert for the 'Digital Rights Governance Expert Group: Advisory Support' by United Nations (UN-Habitat), Cities' Coalition for Digital Rights (CCDR), Eurocities, and UCLG. He selected as expert/evaluator for Horizon Europe research programme by the European Commission.

With the continuous improvement of urbanisation, the development model at the expense of mechanical expansion and resource consumption can no longer meet the relevant requirements of urban development in the era of Big Data. Especially under the requirements of the current development strategy, the application of Big Data and the development of data collection, storage, analysis, and evaluation technologies have promoted the construction of smart cities and the transformation of public thinking. This special issue aims to explore the opportunities, challenges, and benefits associated with integrating Big Data applications into Smart Cities. The issue also includes analyses of the requirements associated with implementing Big Data applications for the services offered by Smart Cities. This special issue of the *International Journal of Data Science* (IJDS) contains highly selective papers in the fields of data science and smart cities that have been reviewed by at least two referees. In these papers, novel approaches are presented in the areas of networks, data fusion, smart algorithms, behaviour recognition, and decision support systems.

The study 'The measurement and promotion of brand influence of Xi'an exhibition industry based on the construction of free trade zone' by Peng Zhang analyses how to measure and promote the brand influence of the Xi'an exhibition industry. From the analysis of the data, it is found that the exhibition industry can not only promote employment and alleviate employment pressure but also contribute to the improvement of the urban environment. China can benefit from the advanced global experience in the development of the exhibition industry by doing a good job in the talent reserve. In addition, the exhibition industry can help create new jobs for the unemployed, which can alleviate the employment pressure to some extent.

Ye Zheng, Kexin Qin, and Zhenmiao Li used the theory of planned behaviour to interview 934 members of the public for their study, 'The relationship between public participation willingness, public participation behaviour, and innovative city construction performance'. The empirical relationship between public involvement willingness, public participation behaviour, and innovative city development performance was then examined using a structural equation model and the bootstrapping approach. Public willingness to participate, arbitrary norms, and perceived behaviour control have all been found to positively influence participation behaviour, which in turn positively influences participation behaviour and the effectiveness of creative city construction.

According to Minmin Xiao's paper, 'Automatic identification of smoking behaviour in public places based on improved YOLO algorithm', an automated approach for identifying smoking behaviour in public places is proposed. To fully achieve the integration of local gesture characteristics and global gesture features, the SPP spatial pyramid pooling module is introduced, completing the automatic recognition of smoking patterns in public places. The edge box structured edge detection operator is applied to the extracted picture edge in order to determine the general area of smoking behaviour recognition. Smoking habit image preprocessing enables facial detection and face feature edge detection.

The large public cultural digital information of the smart library is mined utilising the Apriori association rule mining approach in Na Sun's paper, 'Research on the management of public digital cultural services in smart library'. The Apriori association rule mining method is optimised using the particle swarm optimisation technique to increase the mining efficiency of large amounts of data in the open database of the smart library. As a result, the intelligent service of the smart library incorporates the strong association rule mining technology suited for personalised information push service to realise intelligent book inquiry and push personalised information. The application of the association rule mining algorithm reduces the production of frequent item sets of books, prevents the mining and production of redundant rules, and achieves efficient mining and individualised push of connected book information. Strong association rule mining technology allows for the accurate pushing of books, improvement of library services, improved reader service, and effective management of public digital cultural services of smart libraries, all of which have significant practical application value in smart libraries.

An automatic method of air pollutant concentration detection based on multi-sensor data fusion is proposed in the study 'Automatic detection method of atmospheric pollutant concentration based on multi-sensor data fusion' by Mingchuan Meng, Dawei Lu, Jiong Zhao, Wei Zhang, and Xuehao Zhou to address the problem that the conventional method for detecting the concentration of air pollutants cannot accurately identify the concentration of multiple pollutants. The temperature and humidity sensor DHT22, the $NO_2$ sensor ZE08-CH2O, and the dust sensor ZPH01 make up a multi-sensor environment detection system. And the Kalman filter method is used to combine data from multiple sensors. The enhanced BP network is used to classify pollution source data in order to automatically identify the concentration of comparable air pollutants. An adaptive simulated annealing technique is then used to compute the detection data for the same pollution source. This method improves the detection of air pollutant concentrations overall, increases the accuracy and effectiveness of pollutant concentration detection, and provides a helpful baseline for air monitoring and treatment.

These papers are obtained by the call made for the special issue of *Big Data Analytics for Smart Cities*. All the manuscripts have gone through an extensive double-blind review process. With their cutting-edge models and issues, we think the papers in this special issue will serve as a valuable resource for both academics and practitioners in the field of big data analytics in the construction of smart cities. We appreciate Prof. John Wang's help in making this special issue possible. We also like to express our gratitude to all of the reviewers for their insightful criticism during the review process.