

Guest Editorial Preface

Special Issue on Intelligent Data Analysis and Management

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Intelligent data analysis and management are among the key components for technology advancement today. It has been categorized in the field of “Data Science” in recent years and touches every aspect of the digital world, from data collection and quality management, data store methodologies, data analytics, modeling and design of systems and tools for data processing, data security, data and software engineering, to applications. They are not only areas for academic research, but also essential to real-world applications in many domains.

This special issue provides an opportunity for researchers to publish and disseminate their work on various topics in the area of intelligent data analysis and management. Seven high quality articles were selected for this special issue, with clearly stated contributions to the new developments in theory, algorithms, methodologies, software systems, and applications in the areas of this special issue.

In article 1, Run Zhang and Yongbin Wang propose a more general-purpose, efficient and integrated resolution based on visual cognitive mechanism for natural image quality assessment (IQA). Experimental results show that the proposed resolution correlates better with human perceptual measures.

In article 2, Kong Yanjun, Mei Yadong, Li Weinan and Ben Yue propose an enhanced water cycle algorithm (EWCA) for optimization of multi-reservoir systems. The results show that EWCA has higher ability to find a feasible solution in a narrow searching space than water cycle algorithm (WCA) and water cycle algorithm with evaporation rate (ER-WCA).

In article 3, Zhang Kailong, Xie Ce, Li Xiaowu, Wang Yujia, Li Liuyang, Fei Chao, Wang Min, Yao Yuan, Arnaud de La Fortelle and Duan Zongtao implemented an all reservation-based models of traffic objects, state-driven behaviors, cooperation mechanisms, and policies, which are proposed for service-oriented Cooperative Intelligent Transportation Systems (C-ITS). Through a series of experiments that were conducted with different parameters and typical scenes, all simulation functions are efficiently verified.

In article 4, Seiya Okubo, Yuuta Kado, Yamato Takeuchi, Mitsuo Wakatsuki and Tetsuro Nishino attempt to clarify the fundamentals of the card game Daihinmin. By collecting logs of Daihinmin games on a large scale and analyzing them, we illuminate the game’s characteristics. They investigate the relationship between the initial hands and rankings of players, as well as the influence of the exchange rule, through a computer experiment.

In article 5, Rieko Fujita, Tokuro Matsuo and Teruhisa Hochin survey and analyze how sentences are difference of perceptions between people who are living in different culture. They handle school mottoes as a case of study and clarify the difference of perception of people. They find backgrounds make whom thought from dividing some groups and compare between them.

In article 6, Weiwei Du1, Dandan Yuan, Jianming Wang, Xiaojie Duan, Yanhe Ma and Hong Zhang explain and analyze the label propagation algorithm which is one of the semi-supervised

learning methods to detect the slices including the Ground-Glass Opacity (GGO) nodules based on the parameters²⁹. Experimental results show that the proposal can detect the slices including the GGO nodules effectively.

In article 7, Lilia Lazli and Mounir Boukadoum suggest an automatic segmentation of brain tissues for magnetic resonance and functional images of Alzheimer's patients, based on an efficient and robust genetic-fuzzy-possibilistic clustering scheme for the assessment of white matter, gray matter and cerebrospinal fluid volumes.

It is our sincere hope that this special issue provides stimulation and inspiration, and that it will be used as a foundation for works to come.

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