
Editorial

Katsutoshi Yada

Director of Data Science Laboratory,
Faculty of Business and Commerce,
Kansai University,
3-3-35, Yamate, Suita, Osaka 564-8680, Japan
Email: yada@kansai-u.ac.jp

Biographical notes: Katsutoshi Yada has been a Professor with the Faculty of Business and Commerce, Kansai University. He received his MA and PhD in Business Administration from the Kobe University of Commerce, Hyogo, Japan, in 1994 and 2002, respectively. His research interests focus on information strategy concerning with data mining and effects on organisations by information technology. He has published several papers in the field of data mining. He has played a leading role in research into applications for data mining in Japan. He is the Chair of the DSI Program, a Visiting Professor of Osaka University, and serves as the Chairman or program committee member at many international conferences.

The purpose of this special edition is to introduce research related to data science, such as technology, methods and applications to create value from big data. Also, to show research subjects, future directions of technologies, and possibilities of various applications. In recent years, with the development and rapid spread of sensor networks, cloud computing, and social network services, huge amounts of diverse data are being generated and accumulated. Many innovative services and business models have been created using big data, which is a collection of such diverse and vast data, attracting the attention of many practitioners and researchers around the world. Data science is a key technology that creates new value from big data; it is an interdisciplinary research area of various technologies such as statistics and computer science. Through this special edition, we hope to spark cooperation among different fields in data science for big data.

The first paper proposes a microarea selection algorithm using commuting flows among microareas, as a model of broadband service advertisements. This paper develops from a paper published at the 19th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES 2015) held September 7–9, 2015 in Singapore. The second paper develops a grammar evolution that explicitly obtains relationships between functions, in a symbolic regression problem expressing their relationships from multiple input/output data. Explicitly obtaining the relationships between various functions included in big data can be expected to contribute greatly to its utilisation. The third paper proposes a clock algorithm, which is one of the colour enhancement techniques for improving low resolution images. Now that sensor technologies are developing rapidly, technology to accurately and rapidly process large amounts of image data is an area of great interest. The fourth paper relates to a web service and its experiments, using Linked Open Data (LOD) on location information. This paper develops from papers published at the 15th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES 2011), and

the Third Joint International Semantic Technology Conference (JIST 2013), etc. The fifth paper is on security of mobile agents. The sixth paper is on customer behaviour patterns and purchasing in retail stores. This paper develops from a paper published at the 18th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES 2014). The last paper is a study of knowledge discovery from multidimensional temporal data in a hospital information system. This paper develops from a paper published at ACM IHI 2012.

This special edition consists of valuable papers on applications using big data in various fields, and on their basic theories. We hope that the papers of this special edition will make important contributions to data science for big data.