

Guest Editorial Preface

Special Issue on Knowledge Discovery in Data Using Intelligent Information Systems

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Our capabilities of both generating and collecting data have been increasing rapidly. Contributing factors include the computerization of business, scientific, and government transactions; the widespread use of digital cameras, publication tools, and bar codes for most commercial products; and advances in data collection tools ranging from scanned text and image platforms to satellite remote sensing systems. In addition, popular use of the World Wide Web as a global information system has flooded us with a tremendous amount of data and information. This explosive growth in stored or transient data has generated an urgent need for new techniques and automated tools that can intelligently assist us in transforming the vast amounts of data into useful information and knowledge. Data mining is the most promising solution to the problem. It is a promising and flourishing frontier in data and information systems and their applications. Data mining, also popularly referred to as knowledge discovery from data (KDD), is the automated or convenient extraction of patterns representing knowledge implicitly stored or captured in large databases, data warehouses, the Web, other massive information repositories, or data streams. Data mining is a multidisciplinary field, drawing work from areas including database technology, machine learning, statistics, pattern recognition, information retrieval, neural networks, knowledge-based systems, artificial intelligence, high-performance computing, and data visualization. Various techniques for the discovery of patterns hidden in large data sets, focusing on issues relating to their feasibility, usefulness, effectiveness, and scalability can be addressed through data mining. Data mining emerged during the late 1980s, made great strides during the 1990s, and continues to flourish into the new millennium.

Our special issue should be useful for computer science students, application developers, and business professionals, as well as researchers involved in any of the disciplines listed above. An important motivation for this session was the need to build an organized framework for the study of data mining—a challenging task, owing to the extensive multidisciplinary nature of this fast-developing field. We hope that this series will encourage people with different backgrounds and experiences to exchange their views regarding data mining so as to contribute toward the further promotion and shaping of this exciting and dynamic field.

Recently, we started some activities to establish the platform for exchanging the ideas on data mining for computational social science. We have successfully organized the workshop on Data Mining Technologies in our university. This special issue provides a leading focused forum for timely, in-depth presentation of recent advances in knowledge mining, theory and applications on data mining technologies for computational social science. There are some classic problems in computational social science, such as classification and community detection. Various authors have presented many diverse concepts and applications relating to this area. Precisely, this special issue has highlighted

new advancements in machine learning techniques with respect to different. This issue purposes to present articles dealing with performance enhancements of various sub-modules of knowledge mining systems. Various data mining methodologies discussed under above articles include: pre-processing operations like feature extraction & filtering techniques, web mining, Agent-based Data Analysis and Knowledge Discovery, Intelligent Knowledge Management and Convergence of Data Mining and Intelligent IT Applications.

Being a guest editor, I hope that several research works covered under this special issue will be of great value to many readers/researchers working in the domain of knowledge mining and machine learning. We are also very privileged and grateful to all authors for making their esteemed research contributions to this issue and their involvement during crucial review process. The technical standards and quality of published content is based on the strength and expertise of the reviewer board members who have been grossly involved in providing high quality reviews for the submitted papers. My special thanks go to the Editor-in-Chief of the International Journal of Rough Sets and Data Analysis (IJRSDA), Dr. Nilanjan Dey (Techno India College of Technology, India) for his support, efficiency and competence rendered to this special issue. I would like to thanks to all the staff members of C. V. Raman College of Engineering, Bhubaneswar for their inspiration and cooperation me in various ways for completion of this. My indebted respect and thanks to my loving parents for their love, sacrifice, inspiration, suggestion and support.

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