Special Issue on Data and Knowledge Engineering in Open Social Network

# Guest Editorial

Data and Knowledge Engineering are two related fields which stimulate the exchange of ideas and interaction in open social network. Data and Knowledge Engineering reaches a world-wide researchers, designers, managers and users. Researchers have investigated and analyzed the underlying principles in the design and effective use, and further to share novel research solutions to problems in social network that fulfill the needs of heterogeneous applications and environments and also to identify new issues and directions for future research and development work.

In this special issue, we selected some excellent papers from the first international conference on Data and Knowledge Engineering (ICDKE2010), which was held in Melbourne, Australia, September 1-3, 2010. In addition, we invited and selected some representative research papers in the broad area of Data and Knowledge Engineering area.

The paper titled "Strategic Knowledge Worker Features in the Context of Communities of Practice" proposes the personality traits to portrait the features of knowledge workers suitable of Communities of Practice (CoPs) from the viewpoint of various business strategy. Personality traits are analyzed based on revised Five Factor Model. Organizations invest resources in creating CoPs for competitive advantage and lack of suitable candidates will result in loss of momentum and less knowledge sharing in CoPs and there by underutilizing the resources.

The paper titled "The Self-Adaptive Multi-Splitting Parallel Methods for Non-Hermitian Positive Definite Systems " proposes two new self-adaptive multisplitting parallel methods which the weighting matrices are self-adaptive. An application to solve the two- dimensional advection-diffusion equations is presented.

The paper titled "Specifying Knowledge in Cognitive Multiagent Systems using a class of Hierarchical Petri Nets" develops a framework based on a specific Petri Net to model, specify and codify the knowledge since the social level of the system until the agents reactive levels. This approach is based on an explicit separation between the knowledge level and the mechanisms which will manipulate it.

The paper titled "Microdata Protection Method Through Microaggregation: A Systematic approach " exploits a clustering-based microaggregation method to minimize the information loss. The proposed technique adopts to group similar records together in a systematic way and then anonymized with the centroid of each group individually. The structure of systematic clustering problem is defined and investigated and an algorithm of the proposed problem is developed.

The paper titled "Efficient and Effective Filtering of Duplication Detection in Large Database Applications" analyses a robust filtering technique, called PC-Filter (PC stands for partition comparison), which is proposed for effective and efficient duplicate record detection in large databases. PC-Filter distinguishes itself from all of existing methods by using record partitions in duplicate detection.

The paper titled "Does Information and Communication Technology (ICT) Facilitate Knowledge Management Activities in the 21st Century?" identifies constructs for the implementation of knowledge management (KM) systems to study the effect of ICT on the implementation of KM in a business environment.

The paper titled "Purpose Based Access Control for Privacy Protection in E-Healthcare Services" discusses a comprehensive approach for privacy preserving access control based on the notion of purpose. In the approach, purpose information associated with a given data elements in an XML document specifies the intended use of the data elements.

The paper titled "A Reuse-based Environment to Build Ensembles for Time Series Forecasting" argues that it is possible and necessary to look from a system reuse perspective. Combining ideas from reuse and time series forecasting requirements, this paper proposes an environment to enable reusability for ensemble development. The environment intends to provide a flexible tool for the analyst to include, configure and execute individual methods and to build and execute ensemble experiments.

It has been a great pleasure to run this special issue, which reveals important research results in the field of Data and Knowledge Engineering. We would like to thank Prof. Kassem Saleh, Editor-in-Chief of Journal of Software, and officers of Academy Publisher, for giving us the opportunity to organize this special issue and for their great help in the organization of this issue. We thank all authors for their submissions and all reviewers for their diligent work in evaluating these submissions. We sincerely hope that you enjoy reading these distinguished papers.

**Guest Editors:**

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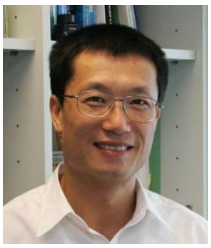

**Xiaohua Jia** received his B.Sc. (1984) and M.Eng. (1987) from the Univ. of Science and Technology of China, and D.Sc. (1991) in Information Science from Univ. of Tokyo, Japan. He is currently a Chair Professor in Dept of Computer Science at City Univ. of Hong Kong. His research interests include distributed systems, computer networks, wireless sensor and mobile ad hoc networks. Prof. Jia is an editor of IEEE Trans. on Parallel and Distributed Systems, Wireless Networks, Journal of World Wide Web, Journal of Combinatorial Optimization, etc. He is the General Chair of ACM MobiHoc 2008, TPC Co-Chair of IEEE MASS 2009, Area TPC Chair of INFOCOM 2010.