PREFACE

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Mobile and wireless services are new and emergent areas of research. There are many new and unresolved issues in the area. For example, research is needed in the areas of mobile database, network, architecture, security, privacy, trust, and agent. In this issue, we have two papers that look at mobile agent applications for data retrieval. In the first paper, ‘Application of Mobile Agents in Mobile Data Access Systems: A Prototype’ by Yu Jiao and Ali R. Hurson, the authors address the issues of multidatabase information retrieval. A mobile agent technology in a Mobile Data Access System (MAMDAS) framework is proposed and the framework achieves better performance, scalability, portability, and robustness.

In the second paper, ‘Mobile Agent Based Self-Adaptive Join for Wide-Area Distributed Query Processing’ by J.-P. Arcangeli, A. Hameurlain, F. Migeon, and F. Morvan, the use of mobile agents in decentralized self-adaptive dynamic optimization and its implementations in Java are presented to achieve reduction in response time and to provide a decision criteria for developing an effective migration policy.

The third paper in this issue looks at end user queries. User-database interaction is an important but often forgotten research area in database. Understanding user’s interaction with database is critical to designing and developing better interface for database query languages. More research in this area is warranted. In the paper, ‘Ex Ante Evaluations of Alternate Data Structures for End User Queries: Theory and Experimental Test’, the authors, Paul L. Bowen, Fiona H. Rohde, and Jay Basford, develop a methodology with the lowest weighted average complexity measured using three different Halstead metrics to evaluate ex ante, the relative desirability of alternative data structures for end user queries.

The last two articles in this issue focus on semantic issues in database. Semantic issues in database are particularly tricky with multidatabase systems and heterogeneous databases. In the fourth paper, ‘Semantic Heterogeneity in Multidatabase Systems: A Review, and a Proposed Meta-Data Structure’ by Te-Wei Wang and Kenneth E. Murphy, the authors introduce a meta-data representation incorporating the taxonomy for differentiating semantic conflicts as a common protocol to resolve semantic conflicts in multidatabase systems at the schema level and at the instance level.

The final paper in this issue is a research note. In their paper, ‘Clustering Schema Elements for Semantic Integration of Heterogeneous Data Sources’, Huimin Zhao and Sudha Ram discuss a cluster analysis based approach using tech-
niques such as K-means, hierarchical clustering, and Self-Organizing Map (SOM) neural network. This is proposed to semi-automate the Interschema Relationship Identification (IRI) process to reduce time and human resources needed in determining the relationships among schema elements in heterogeneous data sources.

This issue provides five excellent papers in the field of database.