EIC Editorial: State of the Transactions

Xindong Wu

Welcome to the 18th volume of the IEEE Transactions on Knowledge and Data Engineering (TKDE)! Several positive changes have taken place in 2005 and I am looking forward to another healthy and productive year in 2006.

1. Highlights of 2005 and the Forthcoming Years

• Our submission rate has kept increasing.

From January 1, 2005 to October 14, 2005 (when this editorial was written), TKDE received 480 new submissions in addition to the revised submissions for the papers that were originally submitted in the previous years. This number has increased significantly compared to 2004: Between January 1, 2004 and October 14, 2004, TKDE received only 366 new paper submissions. To the best of my knowledge, the TKDE submission numbers are far higher than any other journal in data mining, database systems, and knowledge engineering. These numbers give TKDE the luxury of selecting the best papers in knowledge and data engineering for publication in our transactions.

In addition to the overwhelming numbers of submissions, as can be demonstrated by the published papers each year, our authors include world-renowned experts, rising stars, and new researchers (such as PhD students) from the international knowledge and data engineering community. This excellent combination of submission numbers and outstanding authors will maintain the "premier" status of TKDE in the field of knowledge and data engineering for the years to come, including data mining, database systems, and knowledge engineering.

• Our submission-to-decision time continues to improve.

Since I became editor-in-chief at the beginning of 2005, I have been working closely with Susan Miller, the Transactions Assistant, in sending out regular reminders to associate editors for their timely reviewer assignments, expedited actions on papers stuck in the review process, and overdue recommendations. I have also taken urgent actions on several papers when the corresponding handling editors were not responsive.

Given these regular reminders, and more importantly, the hard work and turnaround efficiency of our associate editors and reviewers, the TKDE time from submission to decision improved from 115.39 days in 2003 and 2004 to 85.74 days so far this year.

• We have performed extensive topic area revisions.

To streamline the focus areas of the journal and cover new emerging areas and technological advancements, we have revised TKDE’s topic areas with input from the editorial board and approval from the IEEE Computer Society Publications Board. These topic revisions were detailed in the editorial published in the June 2005 issue. The revised topic listing has identified three focus areas (in alphabetic order): 1) data mining, 2) databases and data modeling, and 3) knowledge engineering and intelligent systems. We strongly encourage paper submissions that contribute toward the integration of these focus areas and their underlying computational platforms and emerging applications.

• We published two special issues in 2005 and will have three special issues in 2007.

To cover promising research topics, TKDE has kept a tradition of organizing and publishing special issues in a timely manner. We published a special issue on Mining Biological Data in the August 2005 issue, and another special issue on Intelligent Data Preparation in the September 2005 issue.

Meanwhile, to maintain the health of TKDE’s current publication queue and to avoid negative impact on the cycle time for our regular papers, we are very selective in special issue topics. We do not have any special issues scheduled for 2006, but in 2007, we will be publishing three special issues on Knowledge and Data Engineering in the Semantic Web Era, Customer Relationship Management: Data Mining Meets Marketing, and Knowledge and Data Management and Engineering in Intelligence and Security Informatics, respectively. Emerging topics on special issues are always welcome, but we will accept special issue proposals in a very careful way.
• An Associate Editor-in-Chief was appointed in 2005.

In 2005, we appointed an Associate Editor-in-Chief, Professor Christos Faloutsos from Carnegie Mellon University. Professor Faloutsos helps me with various TKDE activities, as mentioned in the editorial published in the April 2005 issue. We are also working closely on new TKDE initiatives.

• Annual Editorial Board meetings will be launched at ICDM ‘05.

Starting at ICDM ‘05 in November 2005, we will be having an annual Editorial Board meeting at ICDM and ICDE, at which the associate editors on the Editorial Board and previous Editors-in-Chief are invited to come and discuss their experiences, concerns, and insights, with the Editors-in-Chief and/or the Associate Editor-in-Chief.

Suggestion and advice from these Editorial Board meetings will be taken to the IEEE Publications Office and the Editor-in-Chief for actions.

2. Editorial Board Workload and New Editorial Board Changes

Given the above increase of paper submission numbers, each associate editor on the TKDE Editorial Board and many of our reviewers have received a very significant reviewing load. Some of our associate editors who also serve on the editorial boards of similar journals published by sister societies complained about this heavy load from TKDE at first, but have now happily accepted the fact that TKDE simply receives more paper submissions and the vast majority of the submissions deserve serious reviewing. Since January 1, 2005, those Associate Editors who started their service on the TKDE Editorial Board on or before February 2, 2005, will have each received around 12 new papers for handling by October 17, 2005. Below are a few changes to the Editorial Board.

• In 2005, we lost TKDE Associate Editor, Professor Hongjun Lu.

Professor Lu was a great friend, and his scientific contributions in database systems and data mining will be remembered by the research community.

• S. Muthu Muthukrishnan retired in November 2005.

I would like to take this opportunity to thank Dr. Muthukrishnan for his service to TKDE and for helping us with all the papers he has handled.

• Nine New Associate Editors have been added.

I would like to welcome the following nine new Associate Editors to the TKDE Editorial Board:

• Vijay Atluri, Associate Professor at Rutgers University,
• Claudio Bettini, Professor at the University of Milan, Italy,
• George Kollios, Assistant Professor at Boston University,
• Charles X. Ling, Associate Professor at the University of Western Ontario, Canada,
• Nina Mishra, Senior Research Scientist at HP Labs,
• Bongki Moon, Associate Professor at the University of Arizona,
• Dimitris Papadias, Associate Professor at Hong Kong University of Science and Technology,
• Domenico Talia, Professor at the University of Calabria, Italy, and
• Lipo Wang, Associate Professor at Nanyang Technological University, Singapore.

These new Associate Editors are all well-recognized researchers in their respective areas and their biographies and photos are given on the following pages.

Xindong Wu
Editor-in-Chief
Vijay Atluri received the PhD degree in information technology from George Mason University. She is an associate professor of computer information systems in the MSIS Department, and research director for the Center for Information Management, Integration, and Connectivity (CIMIC) at Rutgers University. Her research interests include information systems security, databases, workflow management, spatial databases, multimedia, and distributed systems. She has published more than 90 technical papers in refereed journals and conference proceedings in these areas. She won the US National Science Foundation CAREER Award in 1996, and the Rutgers University Research Award for untenured faculty for outstanding research contributions in 1999. Currently, she serves as a member of the Steering Committee for the ACM Special Interest Group on Security Audit and Control (SIGSAC) and for the ACM Symposium on Access Control Models and Architectures (SACMAT), a general chair for the 2005 ACM Conference on Computer and Communications Security (CCS), and a co-general chair for the 2005 International Conference on Web Information Systems Engineering. She served as the program chair for the 2003 CCS, and on the program committees of a number of conferences in security and database areas. She has recently been elected as the secretary/treasurer for the ACM SIGSAC. More information about her can be found at http://cimic.ruters.edu/~atluri.

Claudio Bettini received the PhD degree in computer science from the University of Milan in 1993. He is a professor of computer science in the Department of Informatics and Communication (DiCo) at the University of Milan and director of the Data, Knowledge, and Web Engineering Laboratory at DiCo. He is also a research professor at the Center for Secure Information Systems, George Mason University (GMU). His research interests are in the areas of time data management, mobile data management, knowledge representation and reasoning, security, and privacy. His research contributions have been extensively published in the proceedings of major conferences and in the leading journals of both database systems and artificial intelligence. He is co-author of the book *Time Granularities in Databases, Data Mining, and Temporal Reasoning* published by Springer. He is part of the steering committee of the International Symposium on Temporal Knowledge Representation and Reasoning (TIME), and he has been serving on the program committee of many conferences in the database and artificial intelligence areas. His research activity at GMU has been mainly founded by NSF awards, while research activity at the University of Milan is sponsored both by industry and by the Italian Ministry of Scientific Research. More information can be found at http://homes.dico.unimi.it/~bettini.

George Kollios received the Diploma in electrical and computer engineering in 1995 from the National Technical University of Athens, Greece, and the MSc and PhD degrees in computer science from Polytechnic University, New York, in 1998 and 2000, respectively. He is currently an assistant professor in the Computer Science Department at Boston University in Boston, Massachusetts. His research interests include temporal and spatio-temporal indexing, index benchmarking, data mining, multimedia indexing, and sensor and stream data management. His early work on indexing moving objects has been one of the most referenced works in the area of spatio-temporal databases. He is the recipient of an US National Science Foundation (NSF) CAREER Award and his research is supported by NSF and other agencies. He also received a Best Paper Award at the IEEE ICDE 2004 for his paper titled, “Approximate Aggregation Techniques for Sensor Databases.” Dr. Kollios is the general chair for SSTD 2007, was the co-organizer of the IDM NSF workshop for 2004, and served as the local arrangements chair for SSDBM 2003 and IEEE ICDE 2004. He has served on many technical program committees for top database and data mining conferences including VLDB, IEEE ICDE, ICML, and IEEE ICDM, and has been a reviewer for top journals including *IEEE Transactions on Knowledge and Data Engineering, ACM Transactions on Database Systems, VLDB Journal*, and *Information Systems*. He is a member of ACM and IEEE Computer Society.

Charles X. Ling received the MSc and PhD degrees from the Department of Computer Science at the University of Pennsylvania in 1987 and 1989, respectively. Since then, he has been a faculty member of computer science at the University of Western Ontario, Canada. His main research areas include machine learning (theory, algorithms, and applications), data mining, and cognitive modeling. He has published more than 100 research papers in journals (such as *Machine Learning, Journal of Artificial Intelligence Research, IEEE Transactions on Knowledge and Data Engineering, and Cognition*) and international conferences (such as IJCAI, ICML, ECML, and ICDM). He is also the director of the Data Mining Lab, leading data mining development in CRM, bioinformatics, and the Internet. He has managed several data mining projects for major banks and insurance companies in Canada. See http://www.csd.uwo.ca/faculty/cling for more information.
Nina Mishra received the PhD degree in computer science from the University of Illinois at Urbana-Champaign. She currently holds a joint appointment as a senior research scientist at HP Labs and as an acting faculty member at Stanford University. Her research interests are in the design and analysis of data mining, machine learning, and privacy preserving algorithms. She served as a program chair for the ICML ’03 conference (International Conference on Machine Learning) and has served on numerous data mining and machine learning program committees. She also serves on the editorial board of the Machine Learning journal.

Bongki Moon received the BS and MS degrees in computer engineering from Seoul National University, Korea, in 1983 and 1985, respectively. He received the PhD degree in computer science from the University of Maryland, College Park, in 1996, and he is an associate professor of computer science at the University of Arizona. His current research areas of interest are XML indexing and query processing, information streaming and filtering, spatial and temporal databases, and parallel and distributed processing. He was a communication systems research staff member at Samsung Electronics Corporation and Samsung Advanced Institute of Technology, Korea, from 1985 to 1990. He received the US National Science Foundation CAREER Award in 1999.

Dimitris Papadias is an associate professor in the Computer Science Department at the Hong Kong University of Science and Technology (HKUST). Before joining HKUST in 1997, he worked and studied at the German National Research Center for Information Technology (GMD), the National Center for Geographic Information and Analysis (NCGIA, Maine), the University of California at San Diego, the Technical University of Vienna, the National Technical University of Athens, Queen’s University, Canada, and the University of Patras, Greece. He has published extensively and has been involved with the program committees of all major database conferences, including SIGMOD, VLDB, and ICDE. In addition to TKDE, he serves on the editorial boards of VLDB Journal and Information Systems.

Domenico Talia received the Laurea degree in physics from the University of Calabria. He is a full professor of computer science at the University of Calabria, a research associate at ICAR-CNR, and a partner at Exeura S.r.l. His current research interests include distributed knowledge discovery, grid computing, parallel data mining, peer-to-peer systems, and decentralized knowledge management. Dr. Talia is a member of the editorial boards of several journals including the Future Generation Computer Systems journal, the International Journal on Web and Grid Services, and the Web Intelligence and Agent Systems International journal. He is a member of the European Commission expert panel that wrote the “Next Generation Grid” report, a member of the Executive Committee of the CoreGRID Network of Excellence, and a member of the European Knowledge Discovery Network of Excellence. He served as a distinguished speaker in the IEEE Computer Society Chapter Tutorials Program and in the IEEE Computer Society Distinguished Visitors Program. He was a guest editor of special issues of several international journals and he is serving as a program committee member of many conferences. He published three books and more than 160 papers in international journals and conference proceedings. He is member of the ACM and the IEEE Computer Society.
Lipo Wang is an associate professor in the School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore. His research interests include computational intelligence (neural networks, evolutionary computation, fuzzy systems, and chaos), with applications to data mining, bioinformatics, and optimization. He is an author or coauthor of 58 journal publications, 13 book chapters, and 91 conference presentations. He holds a US patent in neural networks. Dr. Wang has authored or edited 17 books, including a monograph *Data Mining with Computational Intelligence* and edited volumes *Support Vector Machines: Theory and Applications*, *Computational Intelligence for Modeling and Predictions*, and *Classification and Clustering for Knowledge Discovery*, all published by Springer in 2005. He was a keynote/panel speaker for several international conferences. He is an associate editor for *IEEE Transactions on Neural Networks*, *IEEE Transactions on Evolutionary Computation*, *IEEE Transactions on Knowledge and Data Engineering*, and *Knowledge and Information Systems*. Dr. Wang is an area editor of the *Soft Computing* journal. He is/was an editorial board member of four additional international journals. He serves/served as general/program chair for nine international conferences and as a member of the steering/advisory/organizing/program committees of more than 100 international conferences. Dr. Wang is Vice President-Elect (Technical Activities, 2006-2007), chair of the Emergent Technologies Technical Committee, and of the IEEE Computational Intelligence Society. He has been on the Governing Board of the Asia-Pacific Neural Network Assembly since 1999 and served as its President in 2002/2003.