MENU

WELCOME

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FIRST INTERNATIONAL WORKSHOP ON AMBIENT INTELLIGENCE, MEDIA AND SENSING
THE SECOND IEEE INTERNATIONAL WORKSHOP ON MULTIMEDIA DATABASE AND DATA MANAGEMENT
THE THIRD INTERNATIONAL WORKSHOP ON PRIVACY DATA MANAGEMENT
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INTELLIGENT USER INTERFACES
WORKSHOP ON DATA MINING AND BUSINESS INTELLIGENCE

PAPERS BY WORKSHOP

PAPERS BY AUTHOR
WORKSHOPS IN CONJUNCTION WITH THE INTERNATIONAL CONFERENCE ON DATA ENGINEERING – ICDE’07

April 15, 16 & 20
Istanbul, Turkey

Editors
Vincent Oria,
Ahmed Elmagarmid,
Fred Lochovsky,
Yücel Saygin
Getting Started

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MESSAGE FROM THE GENERAL CHAIRS

This is the twenty-third International Conference on Data Engineering (ICDE). As the co-general chairs, we welcome you to ICDE 2007 and Istanbul, a beautiful city of Turkey.

The International Conference on Data Engineering (ICDE) conference is an annual international forum for the dissemination of original ideas and research results in data engineering and related technologies, focusing on data engineering techniques and methodologies in the design, development, and assessment of data and information management systems and applications. ICDE conference has been a well established and highly popular forum for academic and industrial researchers, engineers, and practitioners in the field of data engineering at large to exchange original research results, discuss ongoing research projects and initiatives, and establish new research collaborations. ICDE conferences are sponsored by the International Electrical and Electronic Engineers (IEEE), the Computer Society (IEEE CS), and its Technical Committee on Data Engineering (TCDE).

The 23rd International Conference on Data Engineering will continue in its tradition of being a premier forum for presentation of research results and discussion of issues on data and knowledge engineering, aiming at sharing research solutions to open problems and identifying new directions for future research and development. The conference has grown in recent years to include a wide range of associated workshops and papers on diverse topics. In ICDE 2007, we will present you with fifteen workshops dedicating on a variety of specific data engineering topics and research themes. Following last year’s innovative format, ICDE’07 extends to six days from April 15 to April 20. The first and last days will be dedicated to workshops. The four days of the main conference include research presentations, industry sessions, poster sessions, keynote addresses, panels, technical demos, and advanced technical seminars. We are very proud to offer you an exceptionally strong technical program this year.

The conference would not be successful without the dedication and the efforts from many volunteers. We would like to thank the entire organization committee for their hard work in putting together such a successful conference. In particular, we would like to express our deep gratitude to

- The PC co-chairs: Asuman Dogac, Tamer Özsu, Timos Sellis. They have assembled a truly impressive technical program with a selection of high quality papers covering a wide range of data engineering topics.

- The industry track chairs: Fatma Özcan and Patrick Valduriez for organizing an attractive industry program, and our workshops program chairs: Ahmed Elmagarmid, Fred Lochovsky, Yücel Saygin for organizing an outstanding workshop program with 15 workshops.

- The panel chair: Meral Özsoyoglu, the advanced seminar co-chairs: Karl Abererand Gültekin Özsoyoglu, and the demo chairs: Jose Blakeley and Mario Nascimento for the superb demo program, and to our proceeding co-chairs: Rada Chirkova and Vincent Oria for their dedication.

- The treasurer: I. Hakki Toroslu, for his dedication and his attention on many details of the conference organization and finance. The contribution of our treasurer is critical to the success of the conference.

Finally we would like to take this opportunity to thank **Ms. Banu Akman** for her contributions and her help on many local arrangement matters through the preparation and the operation of the conference.

We trust that you will enjoy the technical programs of ICDE 2007 as much as we do and you will meet not only old friends and colleagues but also get to know many new friends and colleagues at the conference.

Ling Liu and Adnan Yazici  
December 2006
MESSAGE FROM THE ICDE 2007 WORKSHOP CO-CHAIRS

It is our pleasure to welcome you to the workshops held in conjunction with the 23rd International Conference on Data Engineering (ICDE 2007) in Istanbul, TURKEY. This year, we received proposals covering a wide range of topics including new ideas and applications. Some of the workshops were already established under ICDE, and they were held for the third time. A local workshop on data mining and business intelligence was selected which did attract local as well as international paper submissions. Following is the full list of workshops included in the ICDE 2007 workshop program:

- Ambient Intelligence, Media, and Sensing
- Databases for Next-Generation Researchers
- Data Mining and Business Intelligence
- Multimedia Databases and Data Management
- Privacy Data Management
- Ranking in Databases
- Scalable Stream Processing Systems
- Security Technologies for Next Generation Collaborative Business Applications
- Self-Managing Database Systems
- Services Engineering
- Spatio-Temporal Data Mining
- Text Data Mining and Management
- Web Personalization, Recommender Systems and Intelligent User Interfaces

We would like to thank all the workshop organizers and workshop PC members for their excellent work. We hope that you will enjoy the ICDE 2007 workshop program and have some time to visit beautiful Istanbul.

Ahmed K. Elmagarmid, Fred Lochovsky, and Yücel Saygin
ICDE 2007 Workshop Co-Chairs
Preface

Pervasive and ambient intelligence systems, which can provide situation-aware services to users, require cognitive capabilities transparently embedded in the surroundings to (a) continuously sense users' needs, status, and the context, (b) filter and fuse multitude of real-time media data, and (c) react by appropriately adapting the environment. For instance, consider a hospital with patients, visitors, and health personnel who are blind or visually impaired. The environment enhanced with ambient data management can provide the visually disabled citizens a variety of services (such as guidance, safety, and information kiosks) that can enable greater independence and mobility. We note that environments, such as smart rooms, smart offices, and smart classrooms, with ambient services have different structures and components; yet, they all need to process various media collected through environmental sensors and react by actuating appropriate responses. Fundamental challenges in deploying media-enriched ambient intelligence involves not only the development of appropriate sensing technologies, but more importantly the design of an environment which can process, integrate, and leverage the sensed data in real time and in a distributed manner to provide the various services. Ambient intelligence software and hardware have to adapt the environment (through actuators which deliver the services) as well as themselves (appropriately allocating resources, processing elements, and quality of service) to the needs of users, their locations and goals. Designing real-time data processing and adaptivity into an open reactive system is challenging as run-time situations are partially known or unknown in the design phase and multiple, potentially conflicting, criteria have to be taken into account during the runtime. A best-effort type of data management is usually not acceptable, as failure of delivery of services (such as appropriate guidance within the environment) cannot be acceptable to users relying on these services. Thus, we have envisioned the International Workshop on Ambient Intelligence, Media, and Sensing (AIMS) with the aim of focusing on the data management challenges associated with the design of such distributed media-rich ambient intelligence systems. In particular, in the first of this series of workshops, we aimed to concentrate on specific research problems related to the information integration, fusion, and delivery for supporting the emerging area of ubiquitous media rich ambient intelligent services. Consequently, we solicited papers in the areas of (a) media sensing and processing, (b) data integration and fusion, (c) data process workflow modeling, design, and verification, (d) modular integration of ambient intelligence services, and (e) their real-time optimization, distributed execution, and adaptation for providing service delivery guarantees. The papers accepted for publication in AIMS07 focus on various related aspects of enabling technologies for the emerging field of situation-aware, media-enriched ambient intelligence, which integrates sensing, data processing, decision making, and response mechanisms into immediate surroundings in the form of ambient intelligence technologies. We are thankful to the authors who have submitted papers to the workshop, to the PC members and reviewers who all have done a fabulous job, to ICDE 2007 organizers (especially to Ahmed Elmagarmid from Purdue University, Fred Lochovsky from HKUST, and Yücel Saygin from Sabanci University, for their support to the workshop and to Rada Chirkova from North Carolina State University and Vincent Oria from New Jersey Institute of Technology for their helps with the proceedings), and to IEEE for their sponsorship. We would also like to thank the Arts, Media and Engineering Program and the Center for Cognitive Ubiquitous Computing at Arizona State University for their financial supports. K. Selçuk Candan, Arizona State University, Maria Luisa Sapino, Universita’ di Torino.
Organizers

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THE SECOND IEEE INTERNATIONAL WORKSHOP ON
MULTIMEDIA DATABASE AND DATA MANAGEMENT

Preface

The exponential growth of digital devices and data-collection technology has generated an
incredibly large amount of multimedia data. Multimedia data are large in sizes and semantically
rich. Traditional data management techniques developed for textual and numerical data do not
work well for multimedia data, especially for time-dependent data (video or audio). Hence,
multimedia databases and advanced multimedia data management techniques such as how to
acquire, organize, store, manage, and use these multimedia data effectively and efficiently need
to be developed.

The main objective of The Second IEEE International Workshop on Multimedia Databases and
Data Management (MDDM’07) is to provide such a forum for discussing the challenges, issues,
and novel solutions in the management of multimedia data and multimedia databases. The target
audiences will be university researchers, scientists, industry professionals, software engineers,
and graduate students who need to become acquainted with new theories and technologies in
multimedia data management, and to all those who wish to gain a detailed technical
understanding of what multimedia data management involves. IEEE MDDM’07 was held in
Istanbul, Turkey on April 15, 2007, in conjunction with 2007 IEEE 23rd International Conference
on Data Engineering (ICDE 2007).

We would like to thank the authors, the program committee members, and the external referees
for their efforts to this workshop. We are grateful to Professor M. Tamer Özsu at University of
Waterloo, Canada for accepting to give a keynote presentation. In addition, we would like to thank
the organizers of IEEE ICDE 2007 for giving us this opportunity to publish these high quality
articles. We hope that the articles in MDDM’07 will serve as a valuable reference for the
multimedia databases and multimedia data management research community.
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THE THIRD INTERNATIONAL WORKSHOP ON PRIVACY DATA MANAGEMENT

Preface

The organizations are increasingly concerned about the privacy of information that they manage (several people have filed lawsuits against organizations violating the privacy of customers data). Thus, the management of privacy sensitive information is a very critical and important for every organization. This poses several challenging problems, such as how to translate the high-level business goals into system-level privacy policies, administration of privacy sensitive data, privacy data integration and engineering, privacy access control mechanism, information-oriented security, query execution on privacy sensitive data for partial answers.

The Third International Workshop on Privacy Data Management (PDM 2007) addresses some of the issues in managing privacy sensitive information. This workshop was held in conjunction with 23rd International Conference on Data Engineering (ICDE 2007), Istanbul, Turkey. Its main objective is to bring together researchers and practitioners to discuss research issues and experience in privacy, security, and trustworthy information systems.

We would like to thank the ICDE 2007 organizing committee for their support and their cooperation. We are very indebted to all program committee members and external reviewers who have reviewed the papers very carefully and in a timely manner. We would also like to thank all the authors who submitted their papers; they provided us with an excellent technical program.
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FIRST INTERNATIONAL WORKSHOP ON RANKING IN DATABASES

Preface

The First International Workshop on Ranking in Databases (DBRank 2007) was held in conjunction with the IEEE 23rd International Conference on Data Engineering (ICDE 2007) in Istanbul, Turkey on April 16th, 2007. The workshop brought together researchers and practitioners with the goal of discussing the semantics, the modeling and the implementation of ranking and ordering in database systems and applications. The workshop provided them with a unique opportunity to share their experience in supporting ranking in various database systems, from relational to semi-structures and unstructured data; and on different levels from query formulation and preference modeling to query processing and optimization frameworks.

A distinguished program committee consisting of 19 program committee members put the technical program together. We received 23 submissions, and each paper was reviewed by 2-3 members of the program committee. After rigorous valuation, 5 regular papers and 5 short papers were accepted for presentation and inclusion in the proceedings. The papers were authored by researchers from 8 countries, which is an indication of the true international flavor of the workshop. The technical program also included two keynote lectures by distinguished researchers Dr. Surajit Chaudhuri from Microsoft Research and Prof. Gerhard Weikum from the Max-Planck Institut für Informatik.

We wish to thank the program committee for their time and effort in the process of selecting the papers and preparing an excellent technical program, the keynote speakers for their inspirational lectures on this critical research area, and for all attendees whose participation was crucial to the success of this workshop.
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Keynote Speakers:

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Microsoft Research  

Prof. Gerhard Weikum,  
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THE SECOND INTERNATIONAL WORKSHOP ON SERVICES ENGINEERING

Preface

The Extensible Markup Language XML is used to represent fine-grained data that originates in repositories in machine readable format by providing structure and the possibility of adding type information, such as XML Schema. A Web service is a software system that supports interoperable application-to-application interaction over the Internet. Web services are based on a set of XML standards, such as Web Services Description Language WSDL, Simple Object Access Protocol SOAP, and Universal Description, Discovery and Integration UDDI. Each service makes its functionality available through well-defined or standardized XML interfaces. The result of this approach is a Service-Oriented Architecture SOA. XML is playing an important role in the data transport protocol for Web services. For example, SOAP messages are used both by service requestors to invoke Web services, and by Web services to answer requests. New challenges arise in the study of services engineering, an emerging research area devoted to the software engineering of service-oriented applications. Services engineering is an important area of the Services Computing Discipline, as promoted by the IEEE Computer Society, ACM, academia and industry. Its goal is to formulate effective solutions to the quality development, deployment and management of these applications.

This workshop aims to explore and investigate various research issues of XML data that is encapsulated by Web services over the network. The theme of this workshop is “XML Data Services,” which includes 12 papers into 4 sessions as follows: Web Services, Business Process and Workflow, Semantic Web, and XML Technologies. The authors are from 11 different countries/areas as follows: Austria, Australia, Canada, China, France, Germany, Greece, Hong Kong, Serbia, Switzerland, and United Kingdom. All submissions were reviewed by at least three members of the program committee. A number of high quality papers had to be rejected due to limitations of the workshop.

Lastly, we wish to express our sincere thanks to all those who submitted papers; to the Program Committee and their colleagues for reviewing papers; and to the ICDE 2007 Workshop Co-Chairs.
Organizers

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Chengfei Liu  Swinburne University of Technology, Australia

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Susan Entwisle  EDS, Australia
SECOND INTERNATIONAL WORKSHOP ON SELF-MANAGING DATA BASES

Preface

After 30 years of advances in functionality and performance, relational database technology has now reached a plateau of maturity. No longer are features and TPC benchmarks what distinguish products that are increasingly commoditized. From the customer’s point of view, what separates one database product from another is its consumability, i.e. its ease of use and total cost of ownership. This watershed in user value is caused not only by the maturity of database technology, but also the continuing decreases in the percentage of overall cost of installed systems contributed by software and especially hardware, while the cost of database administrators (DBAs) continues inexorably to rise. Year after year, fewer DBAs are asked to manage larger and more complex database systems. The resulting dynamic is that people costs – the cost to set up and operate a database – now dominate the total cost of ownership, and must be reduced to keep database products competitive and implementations cost-effective.

As one of the most successful applications of declarative languages in the industry, SQL significantly reduced the expertise needed by application programmers to write database queries versus the navigational languages it replaced. Unfortunately, the daunting tasks and decisions faced daily by DBAs received a lot less attention. The result is a crisis of database administration, where more is expected of fewer DBAs. All those options introduced to maximize performance have left the DBA with a bewildering array of choices that even the best DBAs don’t know how to exploit.

This workshop addresses the issue of consumability of database systems by researching ways to automate as many of the DBA’s tasks as possible, i.e. to make database systems self-managing, rather than simply making them easier to specify. This is a tall order, and a challenging research problem, to develop for any piece of software automated management schemes that are robust enough for all possible environments and applications. It is particularly difficult for software as complex as today’s commercially-viable database management systems. But we simply must address this topic, if the database industry is to continue to grow at the pace of the last three decades.
Organizers

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WORKSHOP ON SPATIO-TEMPORAL DATA MINING

Preface

1. Scope of the workshop

In application areas such as GIS, robotics, computer vision, computational biology, mobile computing and traffic analysis huge amounts of data are generated and stored in databases. In particular, the proliferation of location-aware devices (such as GPS, GSM, and UMTS) gives rise to vast amounts of frequently updated telecommunication and traffic data. Also satellites generate terabytes of image data daily. These data contain, explicitly or implicitly, spatial or spatio-temporal information. These huge collections of spatio-temporal data often hide possibly interesting information and valuable knowledge. It is obvious that a manual analysis of these data is impossible and data mining might provide useful tools and technology in this setting. Spatio-temporal data mining is an emerging research area that is dedicated to the development of novel algorithms and computational techniques for the successful analysis of large spatio-temporal databases and the disclosure of interesting knowledge in spatio-temporal data. After the PKDD-workshop on Mining Spatio-Temporal Data (MSTD) in 2005 and the ICDM-workshop on Spatial and Spatio-temporal Data Mining (SSTDM) in 2006, this workshop wants to bring together experts in knowledge discovery, data mining and analysis of spatial and spatiotemporal data as well as knowledge engineers and domain experts from application areas.

2. Program of the workshop

The works gathered in this workshop essentially cover four topics:

1. Data mining methods for spatial data
2. Trajectory data warehousing with aggregations
3. Privacy models for spatio-temporal data and finally;
4. Data mining methods for spatio-temporal data, including trajectories.

2.1 Spatial data mining

The contributions on spatial data mining face three different problems: how to integrate spatial data mining tools in a GIS environment; how to use predictive methods to mine personally important places from GPS tracks; and how to use background knowledge to effectively filter uninteresting frequent spatial patterns. The first work (An Integrated Platform for Spatial Data Mining within a GIS Environment, by Annalisa Appice, Antonella Lanza and Donato Malerba) provides a proposal of integration of GIS and data mining functionalities in a closely coupled open and extensible GIS architecture, with a sample application in topographic map interpretation. The second contribution (Mining Personally Important Places from GPS Tracks: A Hybrid Approach, by Changqing Zhou, Nupur Bhatnagar, Shashi Shekhar, Loren Terveen) tackles the problem of locating spatial regions that play the role of Points-of-Interest for a given monitored population of individuals. The work proposes a spatial data mining hybrid approach that discretizes continuous GPS data into places and learns important places from the place features. Finally, the problem of controlling the amount of useless patterns extracted from geographical data is addressed (Filtering frequent geographic patterns with qualitative spatial reasoning, by Vania Bogorny, Bart Moelans, and Luis Otavio Alvares), providing a method for filtering specific types of meaningless spatial patterns using qualitative spatial reasoning.

2.2 Trajectory data warehousing

In the trajectory data warehouse field we have two contributions that provide solutions at different levels: one at the level of efficiency of aggregate computation, and the other at the data modeling level. In the first case (Approximate Aggregations in Trajectory Data Warehouses, by F. Braz, S. Orlando, R. Orsini, A. Raffaela, A. Roncato, and C. Silvestri), a data cube with spatial and temporal dimensions, discretized according to a regular grid, is studied, providing a novel way to compute an approximate, yet accurate, presence aggregate function. In the second case (A Data Model for Moving Objects
Supporting Aggregation, by Bart Kuijpers and Alejandro Vaisman) a data model for moving objects data in a GIS scenario is provided, taking into account the problem of aggregation.

2.3 Privacy models for spatiotemporal data

The problem of ensuring some form of privacy at the data level in the case of spatio-temporal data has been also tackled (A k-Anonymity Model for Spatiotemporal Data, by P. Zacharouli, A. Gkoulalas-Divanis, and V.S. Verykios), providing a method to preserve the historical k-anonymity of individuals in a location-based services context. The work extends the existing methods in the field along several directions, and also provides a data generator that allows the composition of spatio-temporal data sets.

2.4 Data mining on spatiotemporal data and trajectories

Spatio-temporal data mining has been studied both in the case of event type data and in the case of trajectory data. A work along the first direction (Mining At Most Top-K% Mixed-drove Spatio- temporal Co-occurrence Patterns: A Summary of Results, by Mete Celik, Shashi Shekhar, James P. Rogers, James A. Shine, and James M.Kang) studies a method for mining spatio-temporal co-occurrence patterns, in particular focusing on the retrieval of top K% patterns, based on the defined quality measure, without requiring any threshold value from the user. The second direction is followed by two papers. The first one (Mining Trajectory Databases via a Set of Distance Operators, by Nikos Pelekis, Ioannis Kopanakis, Irene Ntoutsi, Gerasimos Marketos, and Yannis Theodoridis) introduces a novel set of trajectory distance operators based on primitive (space and time) as well as derived parameters of trajectories(speed and direction), and develop algorithms for each of the proposed operators. The second paper (Incremental Clustering of Mobile Objects, by Sigal Elnekave, Mark Last Oded Maimon), instead, focuses on incremental clustering of moving objects, making use of a bounding box-based distance measure between trajectories.
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In today's world of pervasive networks and ubiquitous computing, people and organizations often rely on time-critical tasks that require accessing data from dynamic information sources and generating responses derived from on-line processing of data in near real-time. In many application domains, information sources are increasingly taking the form of data streams, i.e. time ordered series of events or readings. Examples include stock tickers in financial services, link statistics in networking, sensor readings in environmental monitoring, and surveillance data in Homeland Security, to name a few. The ever increasing rates of data stream sources and the stringent response time requirements of stream processing applications force a paradigm shift in how we process data, moving away from the "store and then process" model of database management systems towards the "on-the-fly processing" model of emerging stream processing systems (SPSs). Due to the large and growing number of users, queries, and information sources, as well as the high aggregate rate of data streams distributed across remote sources, scalability becomes a key challenge, necessitating the development of architectures, protocols, and algorithms that can support building highly scalable, available, and reliable SPSs.

In light of these developments, SSPS 2007 promoted novel research in the area of stream processing systems, and brought together research ideas, concepts, and techniques from the fields of databases, information systems, and distributed systems. All papers submitted for presentation at SSPS 2007, and inclusion in this proceeding, went through a rigorous review process. Each paper was evaluated by at least three reviewers. As a result of this, this year our program contains nine high-quality research papers. These papers are grouped around three main research themes, namely distributed stream processing, query scheduling and execution, and sampling and load shedding. Our program also includes a very timely and interesting keynote talk from Prof. Alfons Kemper, titled "StreamGlobe: Scalable Distributed Data Stream Management for eScience Communities by Load Balancing, Stream Sharing and Multi-Query Optimization".

We want to thank all authors who submitted papers for review. We also want to give our special thanks to the reviewers, whose effort and hard work reflect their commitment and dedication to the success of SSPS 2007.
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Over the past decade, research on business process technologies has focused on the development of collaborative solutions capable of capturing the increasingly dynamic nature of both intra and inter-enterprise workflows. These solutions, which are now starting to be deployed by industry, revolve around service-oriented architectures and event-driven programming paradigms. Globally, they define a new space of "Next Generation Business Applications" which, because of their intrinsic openness and flexibility, also call for new security solutions. While basic security protocols for Web Services, such as the WS-* series of proposals, SAML, and XACML are gaining increasing momentum, a number of fundamental security problems still need to be addressed before collaborative business processes can securely be orchestrated (or choreographed).

SECOBAP’07 is the first in a series of annual workshops organized to provide a forum for presentation and discussion of research advances and emerging practices in this area. The 2007 edition of the workshop was collocated with the 23rd International Conference on Data Engineering (ICDE’07) held in Istanbul in April 2007. The scope of this year’s workshop included:

- Secure business process composition
- Model-driven application security
- Secure business process outsourcing and application hosting
- Semantically-aware security management
- Trust and reputation management
- Adaptive security policy management
- Web services security
- Credential based access control
- Security and trust in mobile collaborative business applications
- Security in event-driven architectures

We wish to thank all those who contributed to the workshop, including the authors, the members of the program committee, and the reviewers. We would also like to acknowledge the generous sponsorship provided by SAP Research.
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WORKSHOP ON TEXT DATA MINING AND MANAGEMENT

Preface

Text processing systems are becoming more and more important as we are overwhelmed with the increasing amount of text data available through the web. Recently, different text mining and management approaches have been proposed for various types of text data such as news articles, emails, instant messages, blogs, group discussions, and scientific papers. Usually, each piece of text data in such text archives carries part of the semantics. For example, in a news archive, each news message may tell us part of a story. Moreover, there can be various types of relations between different pieces/semantics of text data such as temporal relations, spatial relations, and social relations. Considering the news data example, there can be temporal relations (one news was release before another), spatial relations (two news were talking about two events that happened in the same location), and social relations (one person involved in the first news is also involved in the second) between different news messages. To fully explore the semantic hidden behind text data and implicit relations among pieces of semantics is a challenging topic.

Besides traditional text data mining and management issues such as cluster, classification, indexing, and retrieval, this workshop will focus on exploring the following properties of text data: temporal information, spatial information, social information, and semantic information.

- Temporal analysis of text data
- Social analysis of text data
- Spatial analysis of text data
- Semantic extraction of text data
- Text data/stream decomposition
- Online and scalable algorithms
- Applications

These proceedings contain 4 papers, out of 18 submissions, that were accepted for presentation at the workshop. Each paper was reviewed by three members of the program committee. We would like to thank all the authors and attendees for contributing to the success of the workshop. Special thanks are due to the program committee.
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Preface

The phenomenal growth of the Internet has resulted in the availability of huge amounts of online information, a situation that is overwhelming to the end-user. Personalization technologies are becoming increasingly popular providing assistance in filtering, classifying and sharing of online information.

Personalization techniques combine research from artificial intelligence, data mining and user interfaces design. The goal of a personalization system is to adapt its services to each individual user’s preferences. Amongst the popular personalization technologies are recommender systems. Since the development of the first recommender system in the early 90's there has been a lot of interest both from academia and industry in the area of recommender systems research. With the deployment of recommender technology by e-commerce giants such as amazon.com, the basic technology has very quickly gone from the research world to popular applications. With today’s information overload problem the area of recommender systems research remains to be more challenging than ever before.

The 3rd IEEE International workshop on Web Personalization, Recommender Systems and Intelligent User Interfaces is motivated by the challenges that pose on recommender systems, personalisation technologies and user interfaces. This workshop is third in the series, previously the workshop was held in conjunction with ICETE 2005 and AH'06. This workshop received 23 submissions of which 10 have been accepted for presentation. The papers have been grouped into three sessions: User Interfaces for Recommender Systems; User Modelling and Group recommender Systems; Collaborative and Hybrid Recommender Systems;

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WORKSHOP ON DATA MINING AND BUSINESS INTELLIGENCE

Preface

The Workshop on Data Mining and Business Intelligence focuses on data mining techniques and Business Intelligence (BI) applications, such as new customer acquisition, developing customized product and service offerings, customer relationship management, GIS based routing algorithms, fraud detection and credit analysis. With the increased global competition, Business Intelligence becomes more important for the companies. It provides the ability to manage growing volumes of complex data and enables companies to evaluate the data in order to make well informed business decisions. Business Intelligence can be regarded as elevating data to information and then to knowledge. Thus, data mining techniques are the key components for Business Intelligence applications, because they allow users to extract hidden knowledge from large amount of raw data. Data mining has many applications in Business Intelligence and Business Intelligence technologies such as database management, information management, and knowledge management support data mining.

Data mining uses concepts from statistics, machine learning, database management, data warehousing, decision support, visualization, and parallel computing. By applying these techniques for Business Intelligence, organizations are able to identify patterns and understand trends that might affect the business. Data mining and Business Intelligence share many common issues. This workshop aims to stimulate the interaction between industry practitioners and academic researchers working on related problems in similar domains. The goal of the workshop is to foster exchanges between practitioners and the academics, to promote novel solutions to Business Intelligence problems, and to identify new issues and directions for future research and development work. This workshop will provide more insight into relevant common methods and techniques in Business Intelligence and data mining. The workshop will be a great venue for academic, researchers and IT professionals. It will provide an opportunity to help business analysts and academic researchers to share information and to learn from each other's work.

We would like to thank the authors for their efforts, since it is their submissions that laid the foundations of a strong technical program. Each submission was reviewed by at least two program committee members. Thirteen submissions have been selected for presentation. The main selection criterion was the quality of the idea. We would like to thank the members of the program committee for taking time to provide insightful critique, and thus ensuring the high quality of the workshop. Finally, we would like to thank the organizers of ICDE 2007 conference to provide us the opportunity to organize this workshop. Many thanks go to Profs Vincent Oria and Yucel Saygin for providing much help and assistance.

We look forward to the workshop itself and hope that everyone will enjoy it.
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