DASFAA
Database Systems for Advanced Applications

The 17th International Conference on Database Systems for Advanced Applications

15-18 April, 2012
Novotel Ambassador Busan, South Korea

DASFAA
Database Systems for Advanced Applications

DASFAA 2012 Main Conference Program

DASFAA 2012 Workshop Program

DASFAA is an annual international database conference, which showcases state-of-the-art R&D activities in database systems and their applications. It provides a forum for technical presentations and discussions among database researchers, developers and users from academia, business and industry. It is our great pleasure to have your participation and supports for the 17th International Conference on Database Systems for Advanced Applications (DASFAA 2012).

DASFAA 2012 received 159 research paper submissions from 24 countries/regions (based on the affiliation of the first author). After a thorough review, DASFAA 2012 accepted 44 full research papers, 8 short research papers, 8 industrial papers and 17 demo papers. DASFAA 2012 also invited two leading experts in database research and advanced applications as keynote speakers – Divesh Srivastava of AT&T Research and Sang Kyun Cha of Seoul National University & SAP Labs Korea, with their papers entitled "Enabling Real Time Data Analysis" and "A New Paradigm of Thinking and Architecture for Real-Time Information Processing at Fingertips," respectively. The DASFAA 2012 also includes four tutorials, "Detecting Clones, Copying and Reuse on the Web" by Xin Luna Dong and Divesh Srivastava, "Query Processing over Uncertain and Probabilistic Databases" by Lei Chen and Xiang Lian, "Data Stream Mining and Its Applications" by Latifur R. Kahn and Wei Fan and "Storing, Querying, Summarizing, and Comparing Molecular Networks: The State-of-the-Art" by Sourav S. Bhowmick and Boon-Siew Seah and one panel discussion "Data Management Challenges and Opportunities in Cloud Computing", mediated by Kyuseok Shim. Beyond the main conference, five workshops will be held in conjunction with DASFAA 2012. They are the Second International Workshop on Flash-based Database Systems (FlashDB 2012), the First International Workshop on Information Technologies for the Maritime and Logistics (ITEMS 2012), the Third International Workshop on Social Networks and Social Web Mining (SNSM 2012), the Second International Workshop on Spatial Information Modeling, Management and Mining (SIM³ 2012) and the Fifth International Workshop on Data Quality in Data Integration System (DQDI 2012).

DASFAA 2012 is jointly organized by Pusan National University, Database Society of KIISE (Korea Institute of Information Science and Engineering) and BBMC. It received in-cooperation sponsorship from the China Computer Federation Database Technical Committee. We are grateful to the sponsors who contributed generously to making DASFAA 2012 successful. They are the CCCR, Onion Software Inc., NHN, ETRI, Altibase, RealTime Tech, SUNJE SOFT, BUSAN CVB and Korea Database Agency. The conference would not have been possible without the support of many colleagues. We would like to express our special thanks to Honorary Conference Chair, Kyu-Young Whang (KAIST) for the valuable advice on all aspects of organizing the conference. We thank Program Committee Co-chairs, Sang-goo Lee (Seoul National University), Zhiyong Peng (Wuhan University) and Xiaofang Zhou (University of Queensland), Organizing Committee Chair, Bonghee Hong (Pusan National University), Workshop Co-chairs, Hwanjo Yu (POSTECH), Yu Ge (Northeastern University) and Wynne Hsu (National University of Singapore), Industrial Co-chairs, Won Suk Lee (Yonsei University), Mukesh K. Mohania (IBM Research) and Jeffrey Xu Yu (Chinesse University of Hong Kong), Tutorial Chair, Wook-Shin Han (Kyungpook National University), Panel Chair, Kyuseok Shim (Seoul National University), Demo Co-chairs, Wolf-Tilo Balke (TU-Braunschweig) and Seung-Won Hwang (POSTECH), Publicity Co-chairs, Eenjun Hwang (Korea University), Jae-Gil Lee (KAIST) and YunChan Chang (Victoria University), Publication Co-chairs, Rainer Unland (University of Duisburg-Essen), Jaesoo Yoo (Chungbuk National University) and Yang-Sae Moon (Kangwon National University), Finance Chair, Minsoo Lee (Ewha Womans University), Local Arrangements Co-chairs, Joonho Kwon (Pusan National University) and Ok-Ran Jeong (Gachon University), Web Co-chairs, Ha-Joo Song (Pukyong National University) and Young-Koo Lee (Kyung Hee University), Sponsor Co-chairs, Yunmook Nah (Dankook University) and Kyu-Chul Lee (Chungnam National University), Registration Chair, Sanghyun Park (Yonsei University), Best Award Committee Co-chairs, SangKeun Lee (Korea University), Hiroyuki Kitagawa (University of Tsukuba) and Xiaofeng Meng (Renmin University of China), Demo Award Committee Co-chairs, Young-Kuk Kim (Chungnam National University), Takahiro Hara (Osaka University) and Kyoung-Gu Woo (Samsung Electrics), Steering Committee Liaison, Byeong-Soo Jeong (Kyung Hee University), APWeb Liaison, Wookey Lee (Inha University) and EDB Liaison, Jinho Kim (Kangwon National University). Our thanks go to all the committee members and other individuals in putting it all together, and all authors who submitted their papers to this conference.

Finally, we wish you enjoy DASFAA 2012 and the Haewoondae beach of Busan.

Conference General Co-Chairs:

Yoon Joon Lee
KAIST, South Korea

Kazutoshi Sumiya
University of Hyogo, Japan

Ki-Seob Kim, President
Pusan National University, South Korea

Good morning, distinguished professors, invited speakers, students. All welcome to Busan. It is my great honor and pleasure to speak to you at today's opening ceremony for the DASFAA 2012.

The Pusan National University was founded in May 1946 with the establishment of concepts of truth, liberty and devotion. Although our university started initially only two faculties, the faculty of humanities and the faculty of fisheries, it has grown into one of the major research and education institutions covering all the important disciplines. Today, the reputation of our university becomes the top 10 universities in Korea. Our university has since developed into a comprehensive university with now more than 1,100 professors and 500 supporting staffs, comprising 15 undergraduate colleges, 99 departments. The enrolled undergraduate students every year are over 20,000 and the graduate students, more than 7,000. Up to now, our university has totally graduated more than 180 thousand students who have played a pivotal role in the fast growing industrialized Korea economy and social culture. With these large scale human resources, we also are continuously attempting to build close partnerships for practical cooperation and collaboration with advanced foreign universities and organizations.

We are very pleased to celebrate the opening of the 17th meeting of the International Conference on Database Systems for Advanced Applications on behalf of the hosting university, Pusan National University. I learned that the DASFAA 2012 absolutely is one of the leading international conferences, at least the world top 4 conference, on research, development and applications of database systems. I hope that the 17th conference will prove to be a venue for future-oriented discussions with the goal of improving the theories and technologies of databases for world-wide database applications. To my knowledge, this is obviously the fourth conference to be

held in Korea. We do our best to make the DASFAA 2012 successful. The DASFAA 2012 organizing committee chair, Prof. Bonghee Hong, showed extremely hard work for a long time to prepare an outstanding conference. Your strong support and active participation have made the DASFAA 2012 a record-breaking event. I would like to extend my sincere appreciation to all of the committees for their dedication and hard work to make this possible.

I learned that they worked tirelessly discussing and arranging all the necessary steps over the several months. The great result of our conference could have not come without their hard work. Ladies and gentlemen, I sincerely hope that the 17th DASFAA now starting will emerge as the first step to make the quality of this conference programs become world-class. I am sure the comprehensive conference program with long & short paper sessions, tutorial sessions, workshop sessions and industrial sessions all together make this conference more strong and attractive. Generous sponsorships from many industrial companies and research organizations from Korea have recognized that DASFAA 2012 is an important venue to discuss scientific and technological collaboration over the world. Our local arrangement committee did their best to provide maximum hospitality. The local organization chairs decided to provide free lunch and dinner which make all participants more convenient to enjoy this conference. Please feel free to ask questions to committee members. We are here to serve you all the time.

In closing my welcoming address, I wish to reemphasize my hope that the present 17th DASFAA meeting proves more fruitful than any of previous these conferences held in the past. Finally, I would like to express my sincere gratitude for your valuable time in the DASFAA 2012 and memorize the time for visiting Busan. I wish all of you may successfully finish their mission and enjoy returning home, and have the best of health and happiness all the time. Thank you, have a wonderful day.

April 15th, 2012

	SNSM (Ballroom C, 5th floor)	FlashDB (Iris, 4th floor)	SIM^3 (Rose, 5th floor)	ITEMS & DQDI (Camelia, 5th floor)
11:00-17:30	Registration			
11:00-12:00				
12:00-13:00				
13:00-14:00	SNSM			ITEMS
14:00-15:00		FlashDB	SIM^3	DQDI
15:00-16:00	Coffee Break	Coffee Break	Coffee Break	Coffee Break
16:00-17:00	SNSM	FlashDB	SIM^3	DQDI
17:00-18:00				

April 16th, 2012

08:00-09:00	Registration (Foyer, 5th floor)			
09:00-09:15	Opening (Grand Ballroom, 5th floor)			
09:15-10:30	Keynote 1: Enabling Real Time Data Analysis Divesh Srivastava, AT&T Research, USA (Grand Ballroom, 5th floor)			
10:30-11:00	Coffee Break (Foyer, 5th floor)			
11:00-12:15	Panel Discussion: Data Management Challenges and Opportunities in Cloud Computing Sang Kyun Cha, Lei Chen, Wook-Shin Han, Divesh Srivastava, Katsumi Tananka, Hwanjo Yu, Xiaofang Zhou (Grand Ballroom, 5th floor)			
12:15-13:30	Lunch Break (Ballroom C, 5th floor)			
13:30-15:00	Research 1: Query Processing and Optimization (Azalea, 5th floor)	Research 3: XML and Semi-structured Data I (Iris, 4th floor)	Industrial 1: Memory-Based Query Processing (Camellia, 5th floor)	Tutorial 1: Detecting Clones, Copying and Reuse on the Web (Grand Ballroom, 5th floor)
15:00-15:30	Coffee Break (Foyer, 5th floor)			
15:30-17:00	Research 2: Data Semantics and Interoperability (Azalea, 5th floor)	Research 4: XML and Semi-structured Data II (Iris, 4th floor)	Industrial 2: Semantic and Decision Support Systems (Camellia, 5th floor)	Tutorial 2: Query Processing over Uncertain and Probabilistic Databases (Grand Ballroom, 5th floor)
18:10-19:30	Welcome Dinner (Grand Ballroom, 5th floor)			

April 17th, 2012

08:00-09:00	Registration (Foyer, 5th floor)			
09:00-10:15	Keynote 2: A New Paradigm of Thinking and Architecture for Real-Time Information Processing at Fingertips Sang Kyun Cha, Seoul National University, South Korea (Grand Ballroom, 5th floor)			
10:15-10:45	Coffee Break (Foyer, 5th floor)			
10:45-12:15	Research 5: Data Mining and Knowledge Discovery I (Azalea, 5th floor)	Research 8: Privacy and Anonymity (Iris, 4th floor)	Research 11: Temporal and Spatial Data I (Camellia, 5th floor)	Tutorial 3: Data Stream Mining and Its Applications (Grand Ballroom, 5th floor)
12:15-13:30	Lunch Break (Ballroom C, 5th floor)			
13:30-15:00	Research 6: Data Mining and Knowledge Discovery II (Azalea, 5th floor)	Research 9: Data Management in the Web (Iris, 4th floor)	Research 12: Temporal and Spatial Data II (Camellia, 5th floor)	Demo 1: Social Data (Grand Ballroom, 5th floor)
15:00-15:30	Coffee Break (Foyer, 5th floor)			
15:30-17:00	Research 7: Data Mining and Knowledge Discovery III (Azalea, 5th floor)	Research 10: Graphs and Data Mining Applications (Iris, 4th floor)	Research 13: Top-k and Skyline Query Processing (Camellia, 5th floor)	Demo 2: Data Mining (Grand Ballroom, 5th floor)
18:30-20:30	Conference Banquet The Westin Chosun Busan (Rose, Lilac, Tulip, Cosmos, Violet, Peony at 2nd floor)			

April 18th, 2012

08:00-09:00	Registration (Foyer, 5th floor)			
09:00-10:00	Awards & Acceptance Speech Outstanding Contributions, Best Paper, Best Student Paper Awards (Ballroom C, 5th floor)			
10:00-10:30	Coffee Break (Foyer, 5th floor)			
10:30-12:00	Research 14: Information Retrival and Recomendation (Rose, 5th floor)	Research 15: Indexing and Search Systems (Iris, 4th floor)	Research 16: Cloud Computing and Scalability (Camellia, 5th floor)	Tutorial 4: Storing, Querying, Summarizing, and Comparing Molecular Networks: The State-of-the-Art (Ballroom C, 5th floor)
12:30-18:00	Conference Excursion			

Divesh Srivastava
AT&T Research, USA

Enabling Real Time Data Analysis

Abstract:
Network-based services have become a ubiquitous part of our lives, to the point where individuals and businesses have often come to critically rely on them. Building and maintaining such reliable, high performance network and service infrastructures requires the ability to rapidly investigate and resolve complex service and performance impacting issues. To achieve this, it is important to collect, correlate and analyze massive amounts of data from a diverse collection of data sources in real time.

We have designed and implemented a variety of data systems at AT&T Labs-Research to build highly scalable databases that support real time data collection, correlation and analysis, including (a) the Daytona data management system, (b) the DataDepot data warehousing system, (c) the GS tool data stream management system, and (d) the Bistro data feed manager. Together, these data systems have enabled the creation and maintenance of a data warehouse and data analysis infrastructure for troubleshooting complex issues in the network. We describe these data systems and their key research contributions in this talk.

Speaker Biography:
Divesh Srivastava is the head of the Database Research Department at AT&T Labs-Research. He received his Ph.D. from the University of Wisconsin, Madison, and his B.Tech from the Indian Institute of Technology, Bombay. He is on the board of trustees of the VLDB Endowment and an associate editor of the ACM Transactions on Database Systems. He has served as the program committee co-chair of many conferences, including VLDB 2007. He has been invited to present keynotes at many conferences, including VLDB 2010. His research interests and publications span a wide variety of topics in data management. He has presented tutorials on "Data Stream Query Processing" (with Nick Koudas) at VLDB 2003 and ICDE 2005, on "Record Linkage: Similarity Measures and Algorithms" (with Nick Koudas and Sunita Sarawagi) at VLDB 2005 and SIGMOD 2006, on "Anonymized Data: Generation, Models, Usage" (with Graham Cormode) at SIGMOD 2009 and ICDE 2010, and on "Information Theory for Data Management" (with Suresh Venkata-subramanian) at VLDB 2009 and SIGMOD 2010.

Sang Kyun Cha
Seoul National University
SAP Labs Korea, South Korea

A New Paradigm of Thinking and Architecture for Real-Time Information Processing at Fingertips

Abstract:

Today's enterprise-scale information systems comprise of complex vertical tiers of database, application, web, and mobile servers. Horizontal tiers of OLTP and OLAP systems add further complexity to enterprise information management. Historically, such introduction of vertical and horizontal tiers was inevitable to address the complexity and performance problems in the course of building up enterprise applications by divide and conquer. However, these tiers have accumulated so much redundancy and overhead over time, making the overall system difficult and expensive to maintain. Over past decades, we have persistently observed exponential growth of hardware power following the well-known Moore's law. A commodity server can now have hundreds of cores and terabytes of memory, which were not conceivable other than in supercomputers several years ago, at a fraction of cost. This trend is likely to continue at least several years, and at least ten times

of further increase of hardware processing power is expected in the near future. The dramatic hardware advance has brought us to an inflection point that we can eliminate these complex tiers to streamline information delivery to the new generation of end users demanding real-time decision making at fingertips any time anywhere. SAP HANA platform was designed with this rethinking of tiers in enterprise-scale information systems, leveraging the hardware advance and SAP's knowledge of enterprise applications. It enables running OLTP, OLAP, and text processing in a single run-time environment in a scalable way. The foundation of SAP HANA platform is a massively parallel distributed integrated in-memory row and column database system. This talk presents a new paradigm of thinking and architecture underlying SAP HANA platform.

Speaker Biography:

Dr. Sang Kyun Cha has been a professor at Seoul National University in School of Electrical Engineering and Computer Science since February 1992. He is also a founder of TIM System, Inc. (also called Transact In Memory, Inc. in Silicon Valley), which developed the next-generation DBMS technology. This new technology has emerged from several years of experimental research on in-memory database. The company was first established in May 2000 as a university lab venture company in Seoul and was reincorporated in Silicon Valley in 2002 to reach the global software market. Prior to Seoul National University, he worked on an in-memory personal data management project at HP Laboratories, Palo Alto, California from July 1991 to January 1992. He received his Ph.D. in database systems at Stanford University in 1991 with Gio Wiederhold as advisor. While working for Ph.D. at Stanford, he worked at Computer Science Center of Texas Instruments, Inc. in Dallas for six months in 1985 and at IBM Palo Alto Scientific Center as a consultant in 1990-

1991. Prior to Stanford, he worked for DACOM during 1982-1983 as one of early employees with two-digit ID. He received BS in Electrical Engineering and MS in Instrumentation and Control Engineering from Seoul National University, in 1980 and 1982, respectively. From August 2001 to August 2002, he was visiting the database research group in Computer Science Department of Stanford University, where he organized CS545 database seminar in the Fall and Spring quarters, inviting prominent speakers in the industry and academia. From September 2002 to February 2003, he was on unpaid leave from Seoul National University to set up TIM System, Inc. in Silicon Valley. In November 2005, SAP acquired TIM System, Inc. and transformed it to a dedicated R&D Center on business data management and intelligence platform. SAP R&D Center Korea was officially announced on March 25, 2008 by SAP and Korean government providing partial funding for SAP's R&D Center establishment.

Outstanding Contributions Award

Shan Wang
Renmin University of China, China

Prof. Shan Wang has made a great contribution to DASFAA and the computer science and technology area. The detailed information on her contribution is as follows:

Prof. Shan Wang received the BS from Beijing University in 1968 and the MS degrees from Renmin University, China in 1981. From 1984 to 1986, she visited University of Maryland where she joined the development team of the extendable relational DBMS XDB and played a key role in the development of the system. Since she went back to China in 1986, she established the first institute of data engineering and knowledge engineering in China. She made a lot of effort in promoting database research in China as well as in Asia. She wrote a famous database textbook coauthored by Prof. Shixuan Sa, which has been printed in more than 2 million copies and affected several generations of database researchers in China. She established the CCF Database Society in 1999 and served as the first director from 1999 to 2007. During this period, CCF DBS was selected as an excellent CCF organization multiple times. As a result of her effort, many important international conferences in the database area were held in China; they

include PAKDD 1999, CODAS 2001, VLDB 2002, ER 2004, APWeb 2005, DASFAA 2005, SIGMOD 2007, and APWeb 2011. She was a general co-chair of CODAS 2001, VLDB 2002 (in Hong Kong), WAIM 2004, and APWeb 2005. She was also the honorary conference chair of DASFAA 2005 and SIGMOD 2007. She also served as a steering committee member of many conferences in the Asia/Pacific region including DASFAA, APWeb, and WAIM. She also served as the Dean of VLDB Database School in 2005, which was sponsored by The VLDB Endowment. It trained many young database researchers in China. Because of her great contribution to CCF and the database society, the CCF Distinguished Contribution Award was bestowed on her in 2011. Prof. Wang devoted herself to DASFAA activities over a long period of time. She was the honorary conference chair of DASFAA 2005 and served DASFAA as the SC member for seven years. She also actively published papers in DASFAA. She made a significant effort in promoting cooperation of database researchers between China and many Asian countries.

DASFAA 2012 Best Paper Award

Authors: **Hongyun Cai**
University of New South Wales, Australia
Jie Shao
University of New South Wales, Australia
Zi Huang
University of New South Wales, Australia
Xue Li
University of New South Wales, Australia

Context Sensitive Tag Expansion with Information Inference

Abstract:
The exponential explosion of web image data on the Internet has been witnessed over the last few years. The precise labeling of these images is crucial to effective image retrieval. However, most existing image tagging methods discover the correlations from tag co-occurrence relationship, which leads to the limited scope of extended tags. In this paper, we study how to build a new information inference model over image tag datasets for more effective and complete tag expansion. Specifically, the proposed approach uses modified Hyperspace Analogue to Language(HAL) model to mine image tags instead of using association rules or latent dirichlet allocations, which takes advantage of information inference for context sensitive tag expansion to overcome the limitation caused by the tag co-occurrence based methods. The advantage of this approach lies in its ability to generate additional tags that are relevant to a target image but may have weak co-occurrence relationship with the existing tags in the target image. We demonstrate the effectiveness of this proposal with extensive experiments on a large Flickr image dataset.

DASFAA 2012 Best Paper Award Runner-Up

Authors: **Linlin Ding**
Northeastern University, China
Guoren Wang
Northeastern University, China
Junchang Xin
Northeastern University, China
Shan Huang
Northeastern University, China

ComMapReduce: An Improvement of MapReduce with Lightweight Communication Mechanisms

Abstract:
As a parallel programming model, MapReduce processes scalable and parallel applications with huge amounts of data on large clusters. In MapReduce framework, there are no communication mechanisms among Mappers, neither are among Reducers. When the amount of final results is much smaller than the original data, it is a waste of time processing the unpromising intermediate data objects. We observe that this waste can be avoided by simple communication mechanisms. In this paper, we propose ComMapReduce, a framework that extends and improves MapReduce for efficient query processing of massive data in the cloud. With efficient lightweight communication mechanisms, ComMapReduce can effectively filter the unpromising intermediate data objects in Map phase so as to decrease the input of Reduce phase specifically. Three communication strategies, Lazy, Eager and Hybrid, are proposed to filter the unpromising intermediate results of Map phase. In addition, two optimization strategies, Prepositive and Postpositive, are presented to enhance the performance of query processing by filtering more candidate data objects. Our extensive experiments on different synthetic datasets demonstrate that ComMapReduce framework outperforms the original MapReduce framework in all metrics without affecting its existing characteristics.

DASFAA 2012 Best Student Paper Award

Authors: **Gaoping Zhu**
Chinese University of Hong Kong, China

Ke Zhu
Chinese University of Hong Kong, China

Wenjie Zhang
Chinese University of Hong Kong, China

Xuemin Lin
Chinese University of Hong Kong, China

Chuan Xiao
Chinese University of Hong Kong, China

Efficient Subgraph Similarity All-Matching

Abstract:

Being a fundamental problem in managing graph data, subgraph exact all-matching enumerates all isomorphic matches of a query graph q in a large data graph G. The existing techniques focus on pruning non-promising data graph vertices against q. However, the reduction and sharing of intermediate matches have not received adequate attention. These two issues become more critical on subgraph similarity all-matching due to the (possibly) massive number of intermediate matches. This paper studies the problem of efficient subgraph similarity all-matching by developing a novel query processing framework. We propose to effectively decompose a query graph into a hierarchical structure with the aim to minimize the number of intermediate matches and share intermediate matches. Novel techniques are then developed to estimate the number of intermediate matches, efficiently merge the intermediate matches, and generate efficient query execution plans. Experimental on real and synthetic datasets show that our approach outperforms the state-of-the-art approach for orders of magnitude.

DASFAA 2012 Best Student Paper Award Runner-Up

Authors: **Mingxuan Yuan**
Hong Kong University of Science & Technology, China

Lei Chen
Hong Kong University of Science & Technology, China

Semi-Edge Anonymity:
Graph Publication When the Protection Algorithm Is Available

Abstract:

With the popularity of social networks, the privacy issues related with social network data become more and more important. The connection information between users, as well as their sensitive attributes, should be protected. There are some proposals studying how to publish a privacy preserving graph. However, when the algorithm which generates the published graph is known by the attacker, the current protection models may still leak some connection information. In this paper, we propose a new protection model, "Semi-Edge Anonymity", to protect both user's sensitive attributes and connection information even when an attacker knows the publication algorithm. Moreover, any state-of-art tabular data protection techniques can be applied to Semi-Edge Anonymity model to protect sensitive attributes. We theoretically prove that on two utilities, the possible world size and the true edge ratio, the Semi-Edge Anonymity model outperforms any clustering based model which protects links. We further conduct extensive experiments on real data sets for two other utilities. The results show that our model also has better performance on these utilities than the clustering based models.

Panel Discussion:
Data Management Challenges and Opportunities in Cloud Computing

MONDAY, APRIL 16th, 2012, 11:00-12:15 [Grand Ballroom, 5th floor]

Mediator: **Kyuseok Shim**
Seoul National University, South Korea

Panelists: **Sang Kyun Cha**
Seoul National University, South Korea

Wook-Shin Han
Kyungpook National University, South Korea

Katsumi Tanaka
Kyoto University, Japan

Hwanjo Yu
POSTECH, South Korea

Xiaofang Zhou
University of Queensland, Australia

Lei Chen
HKUST, China

Divesh Srivastava
AT&T Research, USA

Analyzing large data is a challenging problem today, as there is an increasing trend of applications being expected to deal with vast amounts of data that usually do not fit in the main memory of a single machine. For such data-intensive applications, database research community has started to investigate cloud computing as a cost effective option to build scalable parallel data management systems which are capable of serving petabytes of data for millions of users. The goal of this panel is to initiate an open discussion within the community on data management challenges and opportunities in cloud computing. Potential topics to be discussed in the panel include: MapReduce framework, shared-nothing architecture, parallel query processing, security, analytical data management, transactional data management and fault tolerance.

Tutorial 1: Detecting Clones, Copying and Reuse on the Web

MONDAY, APRIL 16th, 2012, 13:30-15:00 [Grand Ballroom, 5th floor]

**Xin Luna Dong
and
Divesh Srivastava**

The Web has enabled the availability of a vast amount of useful information in recent years. However, the Web technologies that have also made it easy for sources to copy from each other and often publish without proper attribution. Understanding the copying relationships between sources has many benefits, including helping data providers protect their own rights, improving various aspects of data integration, and facilitating indepth analysis of information flow.

The importance of copy detection has led to a substantial amount of research in many disciplines of Computer Science, based on the type of information considered. The Information Retrieval community has devoted considerable effort to finding plagiarism, near-duplicate web pages and text reuse. The Multimedia community has considered techniques for copy detection of images and video, especially in the presence of distortion. The Software Engineering community has examined techniques to detect clones of software code. Finally, the Database community has focused on mining and making use of overlapping information between structured sources across multiple databases and more recently on copy detection of structured data across sources.

In this seminar, we explore the similarities and differences between the techniques proposed for copy detection across the different types of information. We do this with illustrative examples that would be of interest to data management researchers and practitioners. We also examine the computational challenges associated with large-scale copy detection, indicating how they could be detected efficiently, and identify a range of open problems for the community.

Speaker Biography:
Xin Luna Dong is a researcher at AT&T Labs-Research. She received her Ph.D. from University of Washington in 2007, received a Master's Degree from Peking University in China in 2001, and received a Bachelor's Degree from Nankai University in China in 1998. Her research interests include databases, information retrieval and machine learning, with an emphasis on data integration, data cleaning, personal information management, and Web search. She has led the Solomon project, whose goal is to detect copying between structured sources and to leverage the results in various aspects of data integration, and the Semex personal information management system, which got the Best Demo award (one of top-3) in SIGMOD 2005. She was the associate editor of IEEE Data Engineering Bulletin 9/2011, co-chaired WebDB 2010, and has served in the program committees of SIGMOD 2011, VLDB 2011, PVLDB 2010, WWW 2010, ICDE 2010, VLDB 2009, etc. She has presented two tutorials in SIGMOD and VLDB recently.

Divesh Srivastava is the head of the Database Research Department at AT&T Labs-Research. He received his Ph.D. from the University of Wisconsin, Madison, and his B.Tech. from the Indian Institute of Technology, Bombay. He is on the board of trustees of the VLDB Endowment and an associate editor of the ACM Transactions on Database Systems. He has served as the program committee co-chair of many conferences, including VLDB 2007. His research interests and publications span a variety of topics in data management. He has presented tutorials on "Data Stream Query Processing" (with Nick Koudas) at VLDB 2003 and ICDE 2005, on "Record Linkage: Similarity Measures and Algorithms" (with Nick Koudas and Sunita Sarawagi) at VLDB 2005 and SIGMOD 2006, on "Anonymized Data: Generation, Models, Usage" (with Graham Cormode) at SIGMOD 2009 and ICDE 2010, and on "Information Theory for Data Management" (with Suresh Venkatasubramanian) at VLDB 2009 and SIGMOD 2010.

Tutorial 2: Query Processing over Uncertain and Probabilistic Databases
MONDAY, APRIL 16th, 2012, 15:30-17:00 [Grand Ballroom, 5th floor]

Lei Chen and Xiang Lian

Recently, query processing over uncertain data has become increasingly important in many real applications like location-based services (LBS), sensor network monitoring, object identification, and moving object search. In many of these applications, data are inherently uncertain and imprecise, thus, we can either assign a probability to each data object or model each object as an uncertainty region. Based on these models, we have to re-define and study queries over uncertain data. In this tutorial, we will first introduce data models that are used to model uncertain and probabilistic data. Then, we will discuss various types of queries together with their query processing techniques. After that, we will introduce recent trends on query processing over uncertain non-traditional databases, such as sets and graphs. Finally, we will highlight some future research direction.

Speaker Biography:
Lei Chen received the B.S. degree in computer science and engineering om Tianjin University, Tianjin, China, in 1994, the MA degree from Asian Institute of Technology, Bangkok, Thailand, in 1997, and the Ph.D. degree in computer science from the University of Waterloo, Waterloo, Ontario, Canada, in 2005. He is currently an associate professor in the Department of Computer Science and Engineering, Hong Kong University of Science and Technology. His research interests include probabilistic and uncertain databases, multimedia and time series databases, privacy-preserved data publishing, and sensor and p2p network data management. So far, he published more than 100 conference and journal papers. He got the best paper awards in DASFAA 2009 and 2010. Currently, he is an associated editor of IEEE Transactions on Knowledge and Data Engineering (TKDE). He is PC Track chairs for ACM SIGMM 2011, and IEEE ICDE 2012. He has served as PC members for SIGMOD, VLDB, ICDE, SIGMM, and WWW. He is a member of the ACM and IEEE. He also serves as the vice-chairman of ACM Hong Kong Chapter.

Xiang Lian received the B.S. degree from the Department of Computer Science and Technology, Nanjing University, in 2003. He obtained the Ph.D. degree in the Department of Computer Science and Engineering, Hong Kong University of Science and Technology, Hong Kong, in 2009. From 2009 to 2011, he worked as a post-doctoral fellow in the Department of Computer Science and Engineering, Hong Kong University of Science and Technology, Hong Kong. He is now an assistant professor in the Department of Computer Science at the University of Texas-Pan American. His research interests include query processing over uncertain databases, streaming time series, spatial databases and inconsistent probabilistic databases.

Tutorial 3: Data Stream Mining and Its Applications
TUESDAY, APRIL 17th, 2012, 10:45-12:15 [Grand Ballroom, 5th floor]

Latifur R. Khan and Wei Fan

Data streams are continuous flows of data. Examples of data streams include network traffic, sensor data, call center records and so on. Their sheer volume and speed pose a great challenge for the data mining community to mine them. Data streams demonstrate several unique properties: infinite length, concept-drift, concept-evolution, feature-evolution and limited labeled data. Concept-drift occurs in data streams when the underlying concept of data changes over time. Concept-evolution occurs when new classes evolve in streams. Feature-evolution occurs when feature set varies with time in data streams. Data streams also suffer from scarcity of labeled data since it is not possible to manually label all the data points in the stream. Each of these properties adds a challenge to data stream mining.

Multi-step methodologies and techniques, and multi-scan algorithms, suitable for knowledge discovery and data mining, cannot be readily applied to data streams. This is due to well-known limitations such as bounded memory, high speed data arrival, online/timely data processing, and need for one-pass techniques (i.e., forgotten raw data) issues etc. In spite of the success and extensive studies of stream mining techniques, there is no single tutorial dedicated to a unified study of the new challenges introduced by evolving stream data like change detection, novelty detection, and feature evolution. This tutorial presents an organized picture on how to handle various data mining techniques in data streams: in particular, how to handle classification and clustering in evolving data streams by addressing these challenges. The importance and significance of research in data stream mining has been manifested in most recent launch of large scale stream processing prototype in many important application areas. In the same time, commercialization of streams (e.g., IBM InfoSphere streams, etc.) brings new challenge and research opportunities to the Data Mining (DM) community. In this tutorial a number of applications of stream mining will be presented such as adaptive malicious code detection, on-line malicious URL detection, evolving insider threat detection and textual stream classification.

Speaker Biography:
Latifur R. Khan is currently an Associate Professor in the Computer Science department at the University of Texas at Dallas (UTD), where he has taught and conducted research since September 2000. He received his Ph.D. and M.S. degrees in Computer Science from the University of Southern California (USC), USA in August of 2000, and December of 1996 respectively. His research work is supported by grants from NASA, the Air Force Office of Scientific Research (AFOSR), National Science Foundation (NSF), the Nokia Research Center, and Raytheon. In addition, Dr. Khan's research areas cover data mining, multimedia information management, and semantic web. He has published more than 160 papers in data mining, and database conferences, such as ICDM, ECML/PKDD, PAKDD, AAAI, ACM Multimedia, and journals such as VLDB, TKDE, Bio Informatics, KAIS etc. Dr. Khan has served a PC member of several conferences such as KDD, ICDM, SDM, and PAKDD. Dr. Khan is currently serving on the editorial boards of a number of journals including IEEE Transactions on Knowledge and Data Engineering (TKDE).

Wei Fan received his Ph.D. in Computer Science from Columbia University in 2001 and has been working in IBM T.J.Watson Research since 2000. He published more than 80 papers in top data mining, machine learning and database conferences, such as KDD, SDM, ICDM, ECML/PKDD, SIGMOD, VLDB, ICDE, AAAI, ICML, IJCAI etc. Dr. Fan has served as Associate Editor of TKDD, Area Chair, Senior PC of SIGKDD'06/10, SDM'08/10/11/12 and ICDM'08/09/10, sponsorship co-chair of SDM'09, award committee member of ICDM'09/11, His main research interests and experiences are in various areas of data mining and database systems, such as, risk analysis, high performance computing, extremely skewed distribution, cost-sensitive learning, data streams, ensemble methods, easy-to-use nonparametric methods, graph mining, predictive feature discovery, feature selection, sample selection bias, transfer learning, novel applications and commercial data mining systems. His thesis work on intrusion detection has been licensed by a start-up company since 2001. His co-teamed submission that uses Random Decision Tree (www.dice4dm.com) has won the ICDM'08 Championship. His co-authored paper in ICDM'06 that uses "Randomized Decision Tree" to predict skewed ozone days won the best application paper award. His co-authored paper in KDD'97 on distributed learning system "JAM" won the runner-up best application paper award. He received IBM Outstanding Technical Achievement Awards in 2010 for his contribution in building Infosphere Streams.

Tutorial 4: Storing, Querying, Summarizing, and Comparing Molecular Networks: The State-of-the-Art

WEDNESDAY, APRIL 18th, 2012, 10:30-12:00 [Ballroom C, 5th floor]
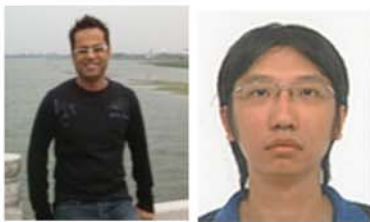
Sourav S. Bhowmick and Boon-Siew Seah

A grand challenge of systems biology is to model the cell. The cell can be viewed as an integrated network of cellular functions. Each cellular function is defined by an interconnected ensemble of molecular networks and represents the backbone of molecular activity within the cell. The critical role played by these networks along with rapid advancement in high-throughput techniques has led to explosion in molecular interaction data. In this tutorial we explore the data management and mining techniques that have been proposed in the literature for storing, querying, summarizing, and comparing molecular networks and pathways. It offers an introduction to these issues and a synopsis of the state-of-the-art.

Speaker Biography:
Sourav S. Bhowmick is an Associate Professor in the School of Computer Engineering, Nanyang Technological University and the Director of Centre for Advanced Information Systems (CAIS). He is currently Visiting Associate Profes

-sor at the Biological Engineering Division, Massachusetts Institute of Technology (MA, USA). He also holds the position of Singapore-MIT Alliance (SMA) Fellow in Computation and Systems Biology program (2005–2012). Sourav received his Ph.D. in computer engineering in 2001. Sourav's current research interests include tree and graph data management, HCI-aware data management, database usability, social media & web data management, data mining, and computation & systems biology. He has published more than 120 papers in major international database, data mining, and bioinformatics conferences and journals such as VLDB, IEEE ICDE, ACM WWW, ACM SIGMOD, ACM SIGKDD, ACM MM, ACM CIKM, ACM BCB, ACM SIGHIT, IEEE TKDE, ACM CS, Information Systems, and DKE. He is serving as a PC member of various database, data mining, and bioinformatics conferences and workshops and reviewer for various database and data mining journals. He is serving as a program chair/co-chair of several international workshops and conferences. He is a member of the editorial boards of several international journals. Sourav has been tutorial speaker for several international conferences such as ER 2006, APWeb 2008, WAIM 2008, PAKDD 2009 and 2011, and DASFAA 2011. Sourav has received Best Paper Awards at ACM CIKM 2004 and ACM BCB 2011 for papers related to evolution mining and biological network summarization, respectively. He was also nominated for Excellence in Teaching Award for three consecutive years (2003 – 2005).
Boon-Siew Seah is a senior doctoral student of Sourav in the School of Computer Engineering, Nanyang Technological University. His research interest includes molecular network mining and graph mining. His research has been published in BCB 2011, SIGHIT 2012, and BMC Bioinformatics. He also received best paper award in ACM BCB 2011.

Monday, April 16th, 2012

08:00-09:00	**Registration (Foyer, 5th floor)**
09:00-09:15	**Opening (Grand Ballroom, 5th floor)**
09:15-10:30	**Keynote 1 (Grand Ballroom, 5th floor)** **Chair: Sang-goo Lee** Enabling Real Time Data Analysis **Divesh Srivastava**
10:30-11:00	**Coffee Break (Foyer, 5th floor)**
11:00-12:15	**Panel Discussion: Data Management Challenges and Opportunities in Cloud Computing (Grand Ballroom, 5th floor)** **Mediator: Kyuseok Shim,** Seoul National University, South Korea **Panelists: Sang Kyun Cha,** Seoul National University, South Korea **Lei Chen,** HKUST, China **Wook-Shin Han,** Kyungpook National University, South Korea **Divesh Srivastava,** AT&T Research, USA **Katsumi Tanaka,** Kyoto University, Japan **Hwanjo Yu,** POSTECH, South Korea **Xiaofang Zhou,** University of Queensland, Australia
12:15-13:30	**Lunch Break (Ballroom C, 5th floor)**
13:30-15:00	**Research Session 1: Query Processing and Optimization (Azalea, 5th floor)** **Chair: Wenjie Zhang** ● Improving the Accuracy of Histograms for Geographic Data Objects Hai Thanh Mai, Jaeho Kim, and Myoung Ho Kim ● Improving Online Aggregation Performance for Skewed Data Distribution Yuxiang Wang, Junzhou Luo, Aibo Song, Jiahui Jin, and Fang Dong ● A Relational-Based Approach for Aggregated Search in Graph Databases Thanh-Huy Le, Haytham Elghazel, and Mohand-Said Hacid
	Research Session 3: XML and Semi-structured Data I (Iris, 4th floor) **Chair: Christoph Lofi** ● Fast Result Enumeration for Keyword Queries on XML Data Junfeng Zhou, Zhifeng Bao, Ziyang Chen, and Tok Wang Ling ● Stars on Steroids: Fast Evaluation of Multi-source Star Twig Queries in RDBMS Erwin Leonardi, Sourav S. Bhowmick, and Fengrong Li ● Updating Typical XML Views Jixue Liu, Chengfei Liu, Theo Haerder, and Jeffrey Xu Yu
	Industrial Session 1: Memory-Based Query Processing (Camellia, 5th floor) **Chair: Sang-Won Lee** ● Highly Scalable Speech Processing on Data Stream Management System Shunsuke Nishii and Toyotaro Suzumura ● EVIS: A Fast and Scalable Episode Matching Engine for Massively Parallel Data Streams Shinichiro Tago, Tatsuya Asai, Takashi Katoh, Hiroaki Morikawa, and Hiroya Inakoshi ● Real-Time Analysis of ECG Data Using Mobile Data Stream Management System Seokjin Hong, Rana Prasad Sahu, M. R. Srikanth, Supriya Mandal, Kyoung-Gu Woo, and Il-Pyung Park ● A Main Memory Based Spatial DBMS: Kairos Hyeok Han and Seong-il Jin
	Tutorial 1: Detecting Clones, Copying and Reuse on the Web (Grand Ballroom, 5th floor) **Xin Luna Dong and Divesh Srivastava**

15:00-15:30	Coffee Break (Foyer, 5th floor)

15:30-17:00	**Research Session 2: Data Semantics and Interoperability (Azalea, 5th floor)**
	 Chair: Tak-Ming Chan
	 ● Discovery of Keys from SQL Tables
	    Van Bao Tran Le, Sebastian Link, and Mozhgan Memari
	 ● A Framework for Realizing Artifact-Centric Business Processes in Service-Oriented Architecture
	    Kan Ngamakeur, Sira Yongchareon, and Chengfei Liu
	 ● Appearance-Order-Based Schema Matching
	    Guohui Ding, Han Dong, and Guoren Wang

Research Session 4: XML and Semi-structured Data II (Iris, 4th floor)
Chair: Zhifeng Bao
- Partitioned Indexes for Entity Search over RDF Knowledge Bases
  Fang Du, Yueguo Chen, and Xiaoyong Du
- SINBAD: Towards Structure-Independent Querying of Common Neighbors in XML Databases
  Ba Quan Truong, Sourav S. Bhowmick, and Curtis Dyreson
- Top-Down SLCA Computation Based on List Partition*
  Junfeng Zhou, Zhifeng Bao, Ziyang Chen, Guoxiang Lan, Xudong Lin, and Tok Wang Ling
- Efficiently Identifying Contributors for XML Keyword Search*
  Ya-Hui Chang, Po-Hsien Chien, and Yu-Kai Chang

Industrial Session 2: Semantic and Decision Support Systems (Camellia, 5th floor)
Chair: Haruo Yokota
- Study on the International Standardization for the Semantic Metadata Mapping Procedure
  Sungjoon Lim, Taesul Seo, Changhan Lee, and Soungsoo Shin
- Semantics and Usage Statistics for Multi-dimensional Query Expansion
  Raphaël Thollot, Nicolas Kuchmann-Beauger, and Marie-Aude Aufaure
- Hierarchy-Based Update Propagation in Decision Support Systems
  Haitang Feng, Nicolas Lumineau, Mohand-Saïd Hacid, and Richard Domps
- An Experiment with Asymmetric Algorithm: CPU Vs. GPU
  Sujatha R. Upadhyaya and David Toth

Tutorial 2: Query Processing over Uncertain and Probabilistic Databases
       (Grand Ballroom, 5th floor)
Lei Chen and Xiang Lian

18:10-19:30	Welcome Dinner (Grand Ballroom, 5th floor)

* Short paper

Tuesday, April 17th, 2012

08:00-09:00	**Registration (Foyer, 5th floor)**
09:00-10:15	**Keynote 2 (Grand Ballroom, 5th floor)** **Chair: Zhiyong Peng** A New Paradigm of Thinking and Architecture for Real-Time Information Processing at Fingertips **Sang Kyun Cha**
10:15-10:45	**Coffee Break (Foyer, 5th floor)**

10:45-12:15	**Research Session 5: Data Mining and Knowledge Discovery I (Azalea, 5th floor)**
	Chair: Carson Leung
	● Semi-supervised Clustering of Graph Objects: A Subgraph Mining Approach
	   Xin Huang, Hong Cheng, Jiong Yang, Jeffrey Xu Yu, Hongliang Fei, and Jun Huan
	● Plink-LDA: Using Link as Prior Information in Topic Modeling
	   Huan Xia, Juanzi Li, Jie Tang, and Marie-Francine Moens
	● AnyOut: Anytime Outlier Detection on Streaming Data
	   Ira Assent, Philipp Kranen, Corinna Baldauf, and Thomas Seidl

	Research Session 8: Privacy and Anonymity (Iris, 4th floor)
	Chair: Xiaofeng Meng
	● Protecting Sensitive Relationships against Inference Attacks in Social Networks
	   Xiangyu Liu and Xiaochun Yang
	● You Can Walk Alone: Trajectory Privacy-Preserving through Significant Stays Protection
	   Zheng Huo, Xiaofeng Meng, Haibo Hu, and Yi Huang
	● Semi-Edge Anonymity: Graph Publication When the Protection Algorithm Is Available
	   Mingxuan Yuan and Lei Chen

	Research Session 11: Temporal and Spatial Data I (Camellia, 5th floor)
	Chair: Yunjun Gao
	● General Spatial Skyline Operator
	   Qianlu Lin, Ying Zhang, Wenjie Zhang, and Aiping Li
	● Top-k Similarity Join over Multi-valued Objects
	   Wenjie Zhang, Jing Xu, Xin Liang, Ying Zhang, and Xuemin Lin
	● Indexing Network Voronoi Diagrams
	   Ugur Demiryurek and Cyrus Shahabi

	Tutorial 3: Data Stream Mining and Its Applications (Grand Ballroom, 5th floor) **Latifur Khan and Wei Fan**
12:15-13:30	**Lunch Break (Ballroom C, 5th floor)**

13:30-15:00	**Research Session 6: Data Mining and Knowledge Discovery II (Azalea, 5th floor)**
	Chair: Jiuyong Li
	● Ensemble Based Positive Unlabeled Learning for Time Series Classification
	   Minh Nhut Nguyen, Xiao-Li Li, and See-Kiong Ng
	● Efficient Mining Regularly Frequent Patterns in Transactional Databases
	   Md. Mamunur Rashid, Md. Rezaul Karim, Byeong-Soo Jeong, and Ho-Jin Choi
	● Fast Tree-Based Mining of Frequent Itemsets from Uncertain Data
	   Carson Kai-Sang Leung and Syed K. Tanbeer

	Research Session 9: Data Management in the Web (Iris, 4th floor)
	Chair: Seon Ho Kim
	● On-the-Fly Generation of Facets as Navigation Signs for Web Objects
	   Yu Kawano, Hiroaki Ohshima, and Katsumi Tanaka
	● Searching for Quality Microblog Posts: Filtering and Ranking Based on Content Analysis and Implicit Links
	   Jan Vosecky, Kenneth Wai-Ting Leung, and Wilfred Ng
	● HotDigg: Finding Recent Hot Topics from Digg*
	   Younghoon Kim and Kyuseok Shim
	● Assessing Web Article Quality by Harnessing Collective Intelligence*
	   Jingyu Han, Xueping Chen, Kejia Chen, and Dawei Jiang

13:30-15:00	**Research Session 12: Temporal and Spatial Data II (Camellia, 5th floor)** **Chair: Jianliang Xu** ● On Efficient Reverse k-Skyband Query Processing 　　Qing Liu, Yunjun Gao, Gang Chen, Qing Li, and Tao Jiang ● Co-spatial Searcher: Efficient Tag-Based Collaborative Spatial Search on Geo-social Network 　　Jinzeng Zhang, Xiaofeng Meng, Xuan Zhou, and Dongqi Liu ● Traffic Aware Route Planning in Dynamic Road Networks 　　Jiajie Xu, Limin Guo, Zhiming Ding, Xiling Sun, and Chengfei Liu
	Demo Session 1: Social Data (Grand Ballroom 5th floor) ● Tag Association Based Graphical Password Using Image Feature Matching 　　Kyoji Kawagoe, Shinichi Sakaguchi, Yuki Sakon, and Hung-Hsuan Huang ● ACARP: Author-Centric Analysis of Research Papers 　　Weiming Zhang, Xueqing Gong, Weining Qian, and Aoying Zhou ● iParticipate: Automatic Tweet Generation from Local Government Data 　　Christoph Lofi and Ralf Krestel ● gRecs: A Group Recommendation System Based on User Clustering 　　Irene Ntoutsi, Kostas Stefanidis, Kjetil Norvag, and Hans-Peter Kriegel
15:00-15:30	**Coffee Break (Foyer, 5th floor)**
15:30-17:00	**Research Session 7: Data Mining and Knowledge Discovery III (Azalea, 5th floor)** **Chair: Ghim Eng Yap** ● On the Decidability and Complexity of Identity Knowledge Representation 　　Klaus-Dieter Schewe and Qing Wang ● Privacy Preserving Mining Maximal Frequent Patterns in Transactional Databases 　　Md. Rezaul Karim, Md. Mamunur Rashid, Byeong-Soo Jeong, and Ho-Jin Choi ● Data Privacy against Composition Attack 　　Muzammil M. Baig, Jiuyong Li, Jixue Liu, Xiaofeng Ding, and Hua Wang
	Research Session 10: Graphs and Data Mining Applications (Iris, 4th floor) **Chair: Sourav S. Bhowmick** ● Context Sensitive Tag Expansion with Information Inference 　　Hongyun Cai, Zi Huang, Jie Shao, and Xue Li ● Efficient Subgraph Similarity All-Matching 　　Gaoping Zhu, Ke Zhu, Wenjie Zhang, Xuemin Lin, and Chuan Xiao ● Efficient Algorithm for Mining Corelated Protein-DNA Binding Cores* 　　Po-Yuen Wong, Tak-Ming Chan, Man-Hon Wong, and Kwong-Sak Leung ● A Novel Approach for Finding Alternative Clusterings Using Feature Selection* 　　Vinh Thanh Tao and JongHyeok Lee
	Research Session 13: Top-k and Skyline Query Processing (Camellia, 5th floor) **Chair: Xuan Zhou** ● Top-k Best Probability Queries on Probabilistic Data 　　Trieu Minh Nhut Le and Jinli Cao ● Probabilistic Reverse Skyline Query Processing over Uncertain Data Stream 　　Mei Bai, Junchang Xin, and Guoren Wang ● Malleability-Aware Skyline Computation on Linked Open Data 　　Christoph Lofi, Ulrich Güntzer, and Wolf-Tilo Balke
	Demo Session 2: Data Mining (Grand Ballroom, 5th floor) ● PEACOD: A Platform for Evaluation and Comparison of Database Partitioning Schemes 　　Xiaoyan Guo, Jidong Chen, Yu Cao, and Mengdong Yang ● Stream Data Mining Using the MOA Framework 　　Philipp Kranen, Hardy Kremer, Timm Jansen, Thomas Seidl, Albert Bifet, Geoff Holmes, 　　Bernhard Pfahringer, and Jesse Read ● Shot Classification Using Domain Specific Features for Movie Management 　　Muhammad Abul Hasan, Min Xu, Xiangjian He, and Ling Chen ● PA-Miner: Process Analysis Using Retrieval, Modeling, and Prediction 　　Anca Maria Ivanescu, Philipp Kranen, Manfred Smieschek, Philip Driessen, 　　and Thomas Seidl
18:30-20:30	**Conference Banquet** **The Westin Chosun Busan (Rose, Lilac, Tulip, Cosmos, Violet, Peony at 2nd floor)**

* Short paper

Wednesday, April 18th, 2012

08:00-09:00	**Registration (Foyer, 5th floor)**
09:00-10:00	**Awards & Acceptance Speech (Ballroom C, 5th floor)** **Chair: Bonghee Hong** **Outstanding Contributions, Best Paper, Best Student Paper Awards** **Acceptance Speech: Shan Wang (Outstanding Contributions Award Recipient)**
10:00-10:30	**Coffee Break (Foyer, 5th floor)**
10:30-12:00	**Research Session 14: Information Retrieval and Recommendation (Rose, 5th floor)** **Chair: Wolf-Tilo Balke** ● Effective Next-Items Recommendation via Personalized Sequential Pattern Mining 　Ghim-Eng Yap, Xiao-Li Li, and Philip S. Yu ● Scalable Top-k Keyword Search in Relational Databases 　Yanwei Xu, Jihong Guan, and Yoshiharu Ishikawa ● Composition and Efficient Evaluation of Context-Aware Preference Queries 　Patrick Roocks, Markus Endres, Stefan Mandl, and Werner Kießling **Research Session 15: Indexing and Search Systems (Iris, 4th floor)** **Chair: Tok Wang Ling** ● An Automaton-Based Index Scheme for On-Demand XML Data Broadcast 　Weiwei Sun, Peng Liu, Jingjing Wu, Yongrui Qin, and Baihua Zheng ● Colored Range Searching on Internal Memory 　Haritha Bellam, Saladi Rahul, and Krishnan Rajan ● Circle of Friend Query in Geo-Social Networks* 　Weimo Liu, Weiwei Sun, Chunan Chen, Yan Huang, Yinan Jing, and Kunjie Chen ● A Power Saving Storage Method That Considers Individual Disk Rotation* 　Satoshi Hikida, Hieu Hanh Le, and Haruo Yokota **Research Session 16: Cloud Computing and Scalability (Camellia, 5th floor)** **Chair: Takahiro Hara** ● ComMapReduce: An Improvement of MapReduce with Lightweight Communication Mechanisms 　Linlin Ding, Junchang Xin, Guoren Wang, and Shan Huang ● Halt or Continue: Estimating Progress of Queries in the Cloud 　Yingjie Shi, Xiaofeng Meng, and Bingbing Liu ● Towards a Scalable, Performance-Oriented OLAP Storage Engine 　Todd Eavis and Ahmad Taleb **Tutorial 4: Storing, Querying, Summarizing, and Comparing Molecular Networks: The State-of-the-Art (Ballroom C, 5th floor)** **Sourav S. Bhowmick and Boon-Siew Seah**
12:30-18:00	**Conference Excursion**

* Short paper

The 2nd International Workshop on Flash-based Database Systems (FlashDB)

SUNDAY, APRIL 15th, 2012, 14:00-17:30 [Iris, 4th floor]

Chair: Xiaofeng Meng
Renmin University of China, China

Lihua Yue
University of Science and Technology of China, China

Website: http://idke.ruc.edu.cn/FlashDB_2012/

Recently, new storage media such as flash memory and phase change memory have been developed very quickly, which bring big challenges to the architecture of computer systems as well as the design of system software. In particular, NAND flash (either SLC- or MLC-based) in the form of solid state disks (SSDs) has been an alternative to traditional magnetic disks, both in the home-user environment and in the enterprise computing environment, due to its shock-resistance, low power consumption, non-volatility, and high I/O speed. The special features of flash memory and other new storage media impose new challenges to traditional data management technologies. As a result, traditional database architectures and algorithms designed for magnetic-disk-based storage fail to utilize new storage media efficiently. Meanwhile, the new characteristics of modern storage media, such as not-in-place update and asymmetric read/write/erase latencies of flash memory, also bring great challenges in optimizing database performance, by using new query processing algorithms, indexes, buffer management schemes, and new transaction processing protocols. Consequently, how to exploit the characteristics of flash memory and other new storage media has become an important topic of database systems research. In order to make use of the characteristics of flash memory and other new storage media, the data management community needs to rethink the algorithms and technical issues in magnetic-disk-oriented database systems and gets them adapted to the advances in the underlying storage infrastructure.

Program:

Welcome and Opening Remarks
by Prof. Xiaofeng Meng

Session 1A: Invited talk
- Commercial SSD Products-Status Quo and Next
  Bumso Kim

Session 1B: Buffer Management Revisit
- Improving Database Performance
  Using a Flash-Based Write Cache
  Yi Ou and Theo Härder
- h-Buffer: An Adaptive Buffer Management
  Scheme for Flash-Based Storage Devices
  Rui Wang, Lihua Yue, Peiquan Jin,
  and Junjie Wang

Coffee Break

Session 2: Flash Memory System Internals
- A Study of Space Reclamation on Flash-Based
  Append-only Storage Management
  Yulei Fan, Wei Cao, and Xiaofeng Meng
- A Dual-Grained FTL for Flash Memory
  Junjie Wang, Lihua Yue, Peiquan Jin,
  and Rui Wang

Session 3: Flashing Up Access Methods
- Impact of Storage Technology on the
  Efficiency of Cluster-Based
  High-Dimensional Index Creation
  Gylfi þór Gudmundsson, Laurent Amsaleg,
  and Björn þór Jónsson
- Implementation of the Aggregated R-Tree
  over Flash Memory (short presentation)
  Maciej Pawlik and Wojciech Macyna
- A Flash-Based Decomposition Storage
  Model (short presentation)
  Qingling Cao, Zhichao Liang, Yulei Fan,
  and Xiaofeng Meng

The 1st International Workshop on Information Technologies for the Maritime and Logistics (ITEMS)

SUNDAY, APRIL 15th, 2012, 13:00-13:50 [Camelia, 5th floor]

Chair: **Stephane Bressan**
National University of Singapore, Singapore

Bonghee Hong
Pusan National University, South Korea

Baljeet Malhotra
National University of Singapore, Singapore

Website: http://www.maritimestudies.nus.edu.sg/ITEMS2012/ITEMS2012.html

According to the International Maritime Organization more than 90% of the global trade, whether it is oil and gas, bulk or containerized cargo, is carried by sea. To this volume leisure, passenger and military shipping must be added to account for the traffic. The stakeholders in the maritime industry are numerous.
Information TEchnology for the Maritime Sector (ITEMS) is an international workshop that aims at creating a forum for researchers and professionals to present and discuss the latest research results and developments of information technologies for the maritime sector. The workshop's scope includes all important aspects of information technology, including simulation of maritime systems (vessels interactions, trajectories, domains); acquisition, processing, and management of maritime data; robotic aspects of port management; web technologies for various aspects of maritime operations; artificial intelligence, decision support systems and data analytics for various maritime partners.
ITEMS will be held in conjunction with DASFAA 2012 that is an annual international database conference, located in the Asia-Pacific region, which showcases state-of-the-art R&D activities in database systems and their applications. DASFAA provides a forum for technical presentations and discussions among database researchers, developers, practitioners and users from academia, business and industry.

Program:

Session 1 (13:00-13:25)
- The Contribution of Bayesian Networks to Manage Risks of Maritime Piracy against Oil Offshore Fields
  Xavier Chaze, Amal Bouejla, Aldo Napoli, Franck Guarnieri, Thibaut Eude, and Benjamin Alhadef

Session 2 (13:25-13:50)
- A Scalable Object Based Discovery Service for Global Tracing of RFID Products
  Gihong Kim, Bonghee Hong, and Joonho Kwon

The 3rd International Workshop on Social Networks and Social Web Mining (SNSM)

SUNDAY, APRIL 15th, 2012, 13:00-17:40 [Ballroom C, 5th floor]

Chair: **Guandong Xu**
Victoria University, Australia

Lin Li
Wuhan University of Technology, China

Wookey Lee
Inha University, South Korea

Website: http://e-research.csm.vu.edu.au/files/snsm2012/index.html

Today the emergence of web-based communities and hosted services such as social networking sites, wikis and folksonomies, brings in tremendous freedom of Web autonomy and facilitate collaboration and knowledge sharing between users. Along with the interaction between users and computers, social media are rapidly becoming an important part of our digital experience, ranging from digital textual information to diverse multimedia forms. These aspects and characteristics constitute of the core of second generation of Web.

A prominent challenge lies in modeling and mining this vast pool of data to extract, represent and exploit meaningful knowledge and to leverage structures and dynamics of emerging social networks residing in the social media. Social networks and social media mining combines data mining with social computing as a promising direction and offers unique opportunities for developing novel algorithms and tools ranging from text and content mining to link mining.

The 3rd International Workshop on Social Networks and Social Media Mining on the Web in conjunction with DASFAA 2012 will bring together the academia, researchers and industrial practitioners from computer science, information systems, statistics, sociology, behavior science and organization science discipline, and provide a forum for recent advances in the field of social networks and social media, from the perspectives of data management and mining.

Program:

Session 1A: Invited Talk
- On Smart and Accurate Contextual Advertising
  Guandong Xu and Zongda Wu

Session 1B: Social Media Mining
- An Efficient Path Nearest Neighbor Query Processing Scheme for Location Based Services
  Yonghun Park, Kyoungsoo Bok, and Jaesoo Yoo
- Social Community Based Blog Search Framework
  Ok-Ran Jeong and Jehwan Oh
- LSA as Ground Truth for Recommending "Flickr-Aware" Representative Tags
  Xian Chen, Hyoseop Shin, and Minsoo Lee

Session 2A: Social Media Mining
- Review Summarization Based on Linguistic Knowledge
  Kyung-Mi Park, Hogun Park, Hyoung-Gon Kim, and Heedong Ko
- Finding Related Mirco-blogs Based on WordNet
  Lin Li, Huifan Xiao, and Guandong Xu

Coffee Break

Session 2B: Social Network Analysis
- Adaptive Access Control Enforcement in Social Network Using Aspect Weaving
  Frédéric Cuppens, Nora Cuppens-Boulahia, and Eduardo Pena Viña
- Exploring Reflection of Urban Society through Cyber-Physical Crowd Behavior on Location-Based Social Network
  Shoko Wakamiya, Ryong Lee, and Kazutoshi Sumiya
- Mining Social Networks for Significant Friend Groups
  Carson Kai-Sang Leung and Syed K. Tanbeer
- Ranking Structural Parameters for Social Networks
  Nidhi R. Arora, Wookey Lee, and Soon-Hyoung Park
- Collaborative Similarity Measure for Intra Graph Clustering
  Waqas Nawaz, Young-Koo Lee, and Sungyoung Lee

The 2nd International Workshop on Spatial Information Modeling, Management and Mining (SIM³)

SUNDAY, APRIL 15th, 2012, 14:00-17:30 [Rose, 5th floor]

Chair: **Xin Wang**
University of Calgary, Canada

Jihong Guan
Tongji University, China

Website: http://ww.ucalgary.ca/sim3/

Nowadays, spatial data exists pervasively in various information systems and applications. The unprecedented amount of spatial data that has been amassed and that is being produced in an increasing speed, via various facilities such as sensors, GPS receivers, smart phones and remote sensing, calls for extensive, deep and sustaining research on spatial information modeling, management and mining. In the past decade, we witnessed increasing research interests in these areas from database, data mining and geographic information systems (GIS) communities.
Following the success of SIM³-2011, SIM³-2012 workshop sticks to the tradition that brings together researchers, developers, users, and practitioner carrying out research and development in spatial information modeling, management and mining, and fosters discussions in all aspects of these research areas. The workshop will provide a forum for original research contributions and practical experiences of spatial information modeling, management and mining and will highlight future trends in these topics.

Program:

Welcome and Opening Remarks
by Prof. Xin Wang

Session 1A: Invited talk
- Spatial Keyword Queries
  Gao Cong

Session 1B: Spatial Query Processing
and Data Mining
- Evaluating Spatial Keyword Queries under the MapReduce Framework
  Wengen Li, Weili Wang, and Ting Jin
- Detection of High-Risk Zones and Potential Infected Neighbors from Infectious Disease Monitoring Data
  Biying Tan, Lei Duan, Chi Gou, Shuyang Huang, Yuhao Fang, Xing Zhao, and Changjie Tang

Coffee Break

Session 2: Spatial Indexing
- A Grid-Based Index and Queries for Large-scale Geo-tagged Video Collections
  He Ma, Sakire Arslan Ay, Roger Zimmermann, and Seon Ho Kim
- Indexing Partial History Trajectory and Future Position of Moving Objects Using HTPR*-Tree
  Ying Fang, Jiaheng Cao, Yuwei Peng, and Nengcheng Chen
- A Linear Broadcast Indexing Scheme in Road Environments with Sensor Networks
  Soo Kang, Dongkyo Hwang, Junho Park, Dongook Seong, and Jaesoo Yoo

Closing Remarks
by Prof. Jihong Guan

The 5th International Workshop on Data Quality in Data Integration System (DQDI)

SUNDAY, APRIL 15th, 2012, 14:00-17:00 [Camelia, 5th floor]

Chair: **Shazia Sadiq**
The University of Queensland, Australia

Ke Deng
The University of Queensland, Australia

Xiaochun Yang
Northeastern University, China

Xiaofang Zhou
The University of Queensland, Australia

Website: http://itee.uq.edu.au/~dke-dq/DQIS2012/

Data integration has been a subject of intense research and development for over three decades. Basically the goal of a data integration system is to provide a uniform interface to a multitude of data sources. Difficulties in overcoming the schematic, syntactic and semantic differences of data from multiple autonomous and heterogeneous sources are well recognized, and have resulted in a multi-billion dollar data integration market and growing. With the phenomenal increase in the scale and disparity of data, the problems associated with data integration have increased dramatically.

A fundamental aspect of user satisfaction from an integration system is the quality of data. Industry reports indicate that expensive data integration initiatives stemming from migrations, mergers, legacy upgrades etc, succeed in achieving a common technology platform, but are rejected by the user communities due to the presence (or exposure) of poor data quality. Poor data quality is known to compromise the credibility and efficiency of commercial as well as public endeavours. Several developments from industry as well as academia have contributed significantly towards addressing the problem.

These typically include analysts and practitioners who have contributed to the design of strategies and methodologies for data governance; solution architects including software vendors who have contributed towards appropriate system architectures that promote data integration; and data experts who have contributed to data quality problems such as duplicate detection, identification of outliers, consistency checking and many more through the use of computational techniques. The attainment of true data quality lies at the convergence of the three aspects, namely organizational, architectural and computational.

Program:

Welcome and Opening Remarks

Session 1: Data Error Prevention and Cleansing
- Bayesian Network-Based Probabilistic XML Keyword Filtering
  Chenjing Zhang, Kun Yue, Jinghua Zhu, Xiaoling Wang, and Aoying Zhou
- Provenance based Conflict Handling Strategies
  Domenico Beneventano
- User Interface Design Guidelines Arrangement in a Recommender System with Frame Ontology
  Maxim Bakaev and Tatiana Avdeenko

Coffee Break

Session 2: Data Quality Assessment
- Incomplete Databases: Missing Records and Missing Values
  Werner Nutt, Simon Razniewski, and Gil Vegliach
- Assessing Information Quality by Six Sigma Method
  Sang Hyun Lee and Abrar Haider

Closing Remarks

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In the evening of April 17th, the conference banquet will be held at The Westin Chosun Busan Hotel. Nominated several times as the "Best Hotel in Busan", and a recipient of the "Top Hotel Management Award", The Westin Chosun Busan is Busan's top representative in the service industry. Directly facing Haeundae beach, The Westin Chosun Hotel offers a great view of the beach and coast line.

Banquet Time: 18:30-20:30

Banquet Place: 2nd floor of The Westin Chosun Busan Hotel

Six small-sized banquet halls located on the 2nd floor have full glass windows with a magnificent view of the Haeundae beach during the day and a striking sea view under the moonlight in the evening, creating a unique atmosphere as if one is floating on a cruise ship.

Transport between Novotel Hotel and the Westin Chosun Busan Hotel

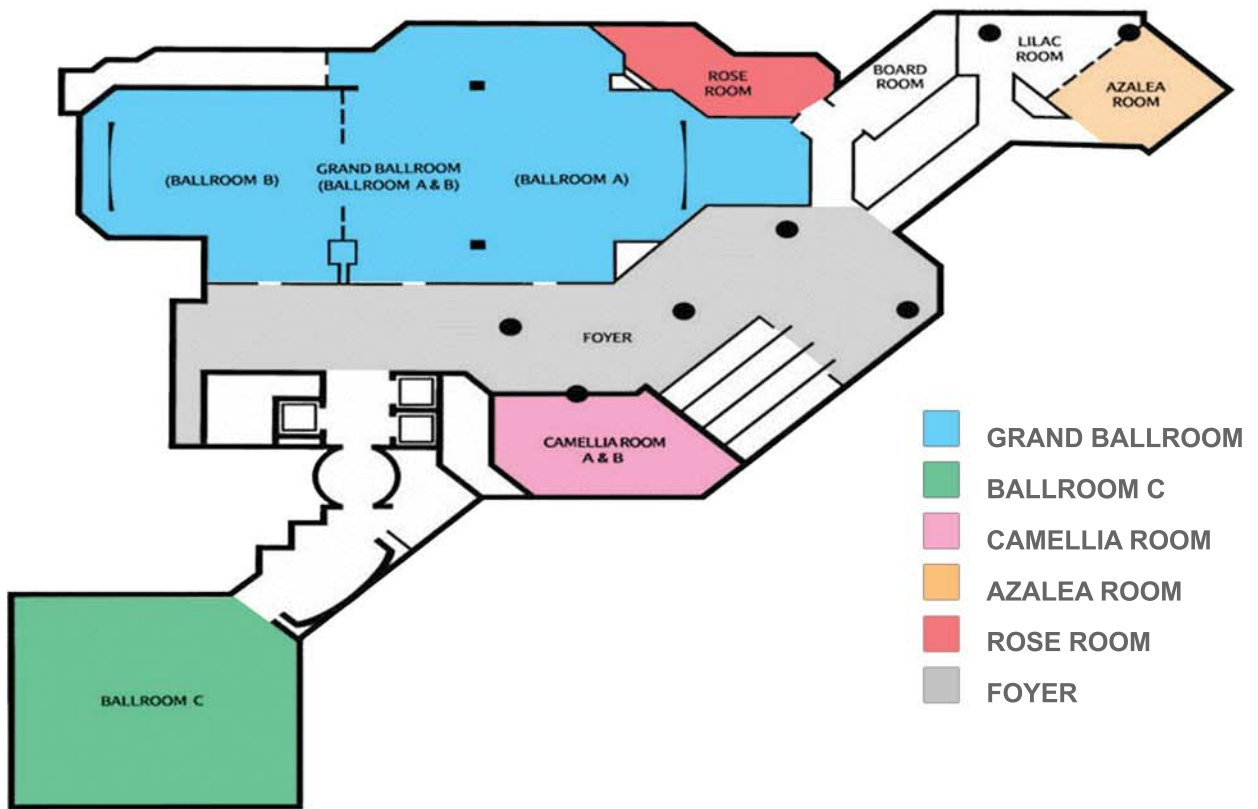Means of Transportation: Shuttle Bus (provided)

Enquiries

Our staff will be at The Westin Chosun Busan Hotel from 6 PM. If you have any question, please reach them there or call at: (+82)10-5811-4472 or mail to dasfaa2012@gmail.com
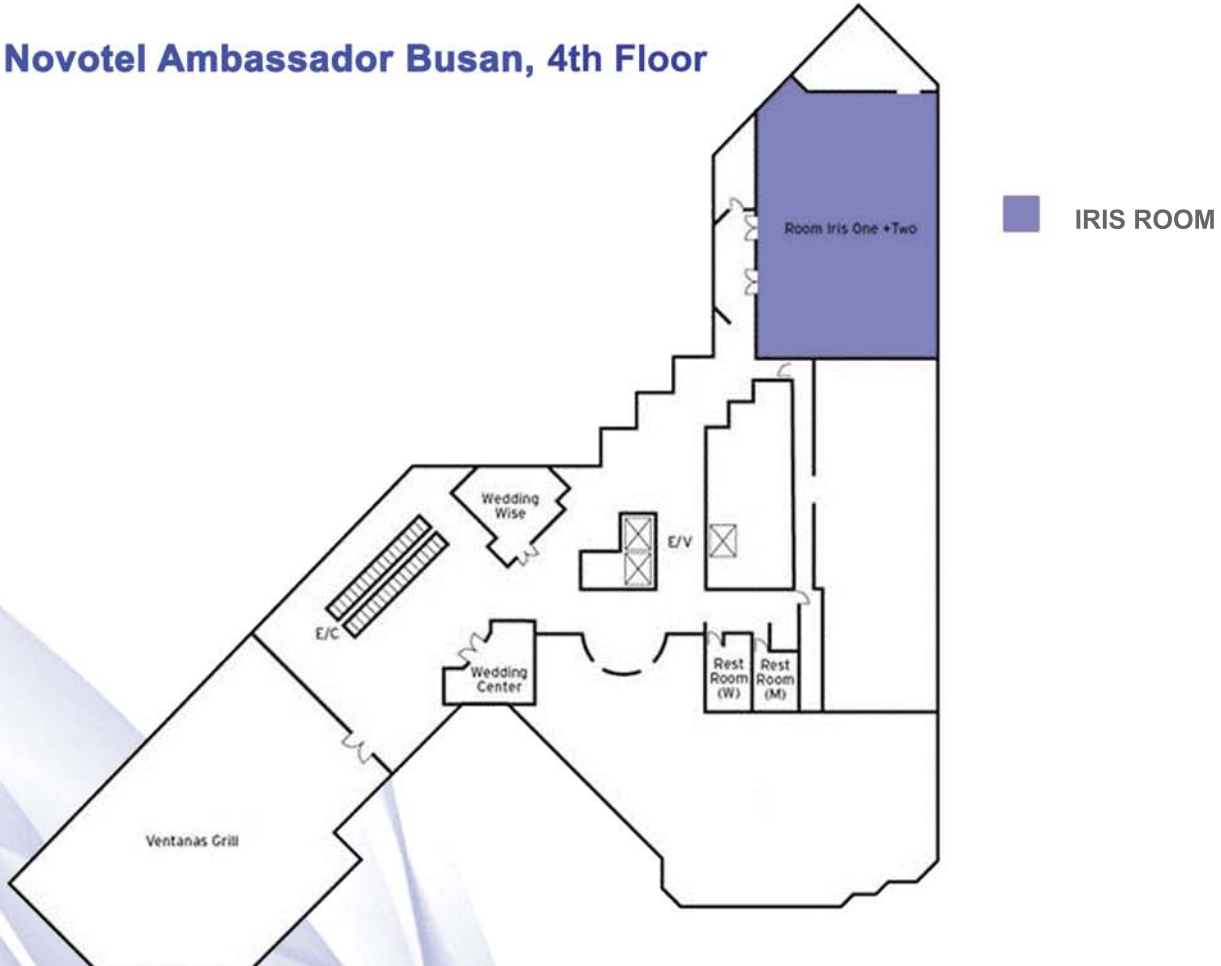

Westin Chosun Hotel
(威斯汀朝鮮酒店)

Novotel Ambassador Hotel
(落富特伊碧斯酒店)

—— Walk: 916 m (14 min)

----- Car: 1.3 Km (4 min)

Novotel Ambassador Busan, 5th Floor

LILAC ROOM

ROSE ROOM

BOARD ROOM

AZALEA ROOM

GRAND BALLROOM (BALLROOM A & B)

(BALLROOM B)

(BALLROOM A)

FOYER

CAMELLIA ROOM A & B

BALLROOM C

- GRAND BALLROOM
- BALLROOM C
- CAMELLIA ROOM
- AZALEA ROOM
- ROSE ROOM
- FOYER

Novotel Ambassador Busan, 4th Floor

Room Iris One +Two

IRIS ROOM

Wedding Wise

E/V

E/C

Wedding Center

Rest Room (W)

Rest Room (M)

Ventanas Grill

26

Shinsegae Dept. Store
(新世界百貨商店)

The largest shopping complex in the world based on Guinness Book of World Record

Westin Chosun Hotel
(威斯汀朝鮮酒店)

Banquet Hotel

Novotel Ambassador Hotel
(諾富特伊碧斯酒店)

Conference Hotel

Gwangan Bridge
(广安里大橋)

Enjoy the attractive atmosphere, the lights of the city

Igidae Park
(二妓台公園)

One of Busan's lesser known scenic trails but exceptionally beautiful

Dongback Park
(冬柏公園)

One of the most scenic places in Busan. Once you're here, "you must come back again"

Dalmajigil Road
(迎月路)

Famously known as a relaxing place in the summer, ever since Haeundae beach opened in 1965

1 **Novotel Ambassador Hotel** (諾富特伊碧斯酒店)

Located at the center of the beautiful Haeundae Beach, Novotel Ambassador Busan is a member of the world hotel chain Accor. Novotel Ambassador Busan provides the best service as they are located close to Bexco, the business district, and the Busan Aquarium.

2 **Westin Chosun Hotel** (威斯汀朝鮮酒店)

The Westin Chosun Hotel, nominated several times as the "Best Hotel in Busan". Directly facing Heundae beach, The Westin Chosun Hotel offered a great view of the beach and coast line.

3 **Dongback Park** (冬柏公園)

In old days, it was completely part of an isle that separate from the land, but now it is connected due to the heaps of deposit for a long time. Dongbaek Park boasts of a beautifully landscapes with paved walkways, pagodas, and camellia trees. Dongbaek is the Korean name for camellia trees. The paved walkways are shaded by the branches of the trees lining the path.

4 **Dalmajigil Road** (迎月路)

Dalmajigil Road, located on the winding road from Haeundae to Songjeong along the seashore, is a beautiful road that commands a fantastic view of the sea. The road deserves its nickname "Street of Culture", as it dotted with a variety of art galleries and attractive cafes, such as Gallery Montmartre, The Korea Art Center, and Chae's Art Center.

1 Igidae Park (二妓台公園**)**

Igidae Park was made of trails, bridges, and stairs paralleling the jagged coastline. Basically it's the city's "other coastline" – look straight and you can see Haeundae Beach; look left and you face the Gwangan Bridge.

3 Shinsegae Dept. Store (新世界百貨商店)

Shinsegae Dept. Store is registered as the largest shopping complex in the world. Has a countless number of items all under one roof. Bringing the concept of "Golden Sea", it is a defining landmark in Busan.

4 BEXCO (釜山國際会展中心**)**

BEXCO (Busan Exhibition & Convention Center) has been selected as the venue for the 2005 APEC summit. One of it hall that called Glass Hall is made up of light green double-glass giving the feeling of an extensive three-dimensional space

2 Gwangan Bridge (广安里大橋)

Drive across Gwangan Bridge and you can see best tourist attraction of Busan at a glance. At night, this creates a very attractive atmosphere with all the bright lights of the city. Escpecially when **Busan Fireworks Festival** takes place in October.

1 **Geoga Bridge (巨加大橋)**

The four-lane Geoga Bridge connecting Busan and Geoje opened on December 14th , 2010. The 8.2km bridge connects Gadeokdo Islan, Busan, and Jangmyok-myeon. Consists of a sea-level cable-stayed bridge (3.5km), an undersea tunnel (3.7km) and a ground tunnel (1.0km)

2 **DSME (Daewoo Shipbuilding & Marine Eng.)**

Started in 1973 at Okpo Bay, Geoje Island, located on the southeastern tip of the Korean Peninsula, the shipyard of DSME was completed in 1981. DSME's vessels are highly appreciated for their finest quality in the world's shipbuilding market.

The diamond-shaped bridge portion contrasts well with the area surrounding the Namhae. The undersea tunnel portion passes 48 meters below sea level and is the first in the world to be constructed at such a far distance from the mainland.

1 **Geoga Bridge (巨加大橋)**

DASFAA 2012 CONFERENCE EXCURSION

The Organizing Committee of DASFAA 2012 proudly presents the DASFAA 2012 Tour Program. The purpose of this program is to give some insight about the current technology of shipbuilding and marine engineering, presented by one of worlds premium shipbuilding and offshore contractor, Daewoo Shipbuilding and Marine Engineering.

Daewoo Shipbuilding and Marine Engineering

Starting in 1973, DSME has since grown into the worlds premium shipbuilding and offshore contractor who is specialized in building various vessels, offshore platforms, drilling rigs, FPSO/FPUs, submarines, and destroyers. With 4.3 million meters squared shipyard area, DSME is optimized for building high-tech motor vessels using cutting-edge equipment. Reborn as independent company in October 2000, DSME has been creating a corporate culture on the core values of Trust and Passion. Also, DSME became the first shipbuilder to deploy the Enterprise Resource Planning (ERP) system to secure transparent management and established a process innovation system that increases management efficiency.

Date: April 18th, 2012

	Visiting location	Time
Departure	Novotel Ambassador Hotel (諾富特伊碧斯酒店)	**12:30**
Bus view	Gwangan Bridge (广安里大橋)	12:46
Bus view	Busan New Port (釜山新港)	13:26
Bus view	Gadeokdo Island (加德島)	13:40
Bus view	Geoga Bridge (Busan – Geoje)(巨加大橋)	14:10
Industrial Visit	**Daewoo Shipbuilding & Marine Engineering (大宇造船海洋)**	**14:50**
Arrival	Novotel Ambassador Hotel (諾富特伊碧斯酒店)	**18:00**

During our journey there, we will be passing by some places that are considered wonders of Korea. Gwangan Bridge, one of the largest bridge over the ocean in Korea, stretches over 7.4km. Busan New Port, one of the national priority projects designed to help Korea become financial and logistic hub of Asia. Last but not least is the four-lane Geoga Bridge connecting Busan and Geoje. It consists of sea-level cable-stayed bridge (3.5km), and undersea tunnel (3.7km), and a ground tunnel (1.0km). The bridge reduces the travel distance between Busan to Geoje from 140km to 60km.

Busan at a glance:

Busan, a bustling city of approximately 3.6 million residents, is located on the southeastern tip of the Korean peninsula. The size of Busan is 765.64km² which is 0.8% of the whole land of the Korean Peninsula. The natural environment of Busan is a perfect example of harmony between mountains, rivers and sea. Its geography includes a coastline with superb beaches and scenic cliffs, mountains which provide excellent hiking and extraordinary views, and hot springs scattered throughout the city. Busan enjoys four distinct seasons and a temperate climate that never gets too hot or too cold. Busan is the second largest city in Korea. Its deep harbor and gentle tides have allowed it to grow into the largest container handling port in the country and the fifth largest in the world. In the coming years, capacity is set to grow further with the opening of the New Port. The city's natural endowments and rich history have resulted in Busan's increasing reputation as a world class city of tourism and culture, and it is also becoming renowned as an international convention destination.

Location:

Busan is located on the southeastern tip of the Korean Peninsula at 128° east longitude and 35° north latitude. It is an international city linking the continent and the sea. Busan is located on the same latitude as Tokyo, Los Angeles and Beirut. Busan is about 8 hours and 37 minutes ahead of World Standard Time, and about 24 minutes behind Korean Standard Time.

Climate:

Located within the temperate monsoon zone and influenced by the maritime climate, the city has four distinct seasons. Busan is relatively warm throughout the year with the average annual temperature being 14°C and the average winter temperature being 3.8°C. The winds are strong due to its location next to the ocean, but such conditions are advantageous in the summer time, as Busan is cooler than other regions.

Registration Desks:

Workshops	April 15th, 2012	
	11:00-17:40 Foyer, 5th floor	
Main Conference	April 16th-17th, 2012	April 18th, 2012
	08:00-17:00 Foyer, 5th floor	08:00-12:00 Foyer, 5th floor
Receptions	April 16th, 2012	April 17th, 2012
	18:10-19:30 Grand Ballrom, 5th floor	18:30-20:30 2nd floor in Westin Chosun Hotel

WIFI Connection:

Every participant will receive login ID and password for Internet access.

WIFI service is available during the conference period (April 15th-18th, 2012) at the conference venue (4th-5th floors in Novotel Ambassador Busan).

Contact Information:

If there is any problem, please contact us at:

Email: dasfaa2012@gmail.com

Phone No: +82-10-5811-4472
                (Operates during 15-18 April, 2012, from 08:00-23:00)

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