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Conference Committee Members

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University of Regensburg, Germany
KAIST, Korea
Universiti Kebangsaan Malaysia, Malaysia
Central University of Bihar, India
Kyushu University, Japan
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Harksoo Kim
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Bong Jun Ko
Chang Geun Song
Soongsil University, Korea
Nanjing University, China
Kangwon National University, Korea
Tsinghua University, China
Kyungpook National University, Korea
IBM T. J. Watson Research Center, USA
Hallym University, Korea
Greetings

Message from the General Co-Chairs and Organizing Committee Chair

We would like to welcome you to the 1st International Conference on Big Data and Smart Computing 2014 (BigComp 2014) held in Bangkok, Thailand. It is our great pleasure to meet all of the attendees, authors, invited speakers, and distinguished guests in BigComp 2014.

BigComp 2014 is sponsored by KIISE and technically co-sponsored by IEEE Computer Society. This year, we have received a number of high-quality paper submissions and selected outstanding papers for presentation in BigComp 2014. We hope you will participate in 12 oral presentation sessions and 2 invited sessions in the areas of visualization, bio-informatics, database technology for big data, collaborative filtering & recommendation, cloud computing & services, image/multimedia data management, database in MapReduce framework, natural language processing & information retrieval, big data analytics & social media, machine learning & AI for big data, big data & smart computing applications, networks for big data and smart computing, smart computing software & algorithms, and platform & infrastructure for smart computing. We have also invited two distinguished keynote speakers, Prof. Divy Agrawal in the Dept. of Computer Science, University of California at Santa Barbara and Prof. Tok Wang Ling in the Dept. of Computer Science, National University of Singapore.

We believe that BigComp 2014 will be an excellent opportunity to share the recent research trends among the experts from around the world, and we hope that you will enjoy this world premier conference.

We are also quite blessed to have prominent Steering Committee Members who have enthusiastically provided their expertise and great support to make this conference successful. We would like to thank each one of them for their contribution.

Bangkok, the capital city of Thailand, is one of the world's top tourist destination cities with multifaceted sights, attractions, and city life. We hope that you will experience the rich heritage of Thailand and the exotic city life and find a uniqueness of its customs. We are sure that you will truly enjoy this conference and wish you a memorable stay!
Greetings

Message from the Technical Program Committee Co-Chairs

It is our great pleasure to welcome you to BigComp2014, the International Conference on Big Data and Smart Computing (BigComp). BigComp is a conference for exchanging ideas and information on current issues, challenges, research results, system development, and practical experiences in Big Data and Smart Computing areas which recently draw much attention and interest.

This year we received 121 papers from 19 different countries. Through a rigorous review process, we finally accepted 53 papers for presentation. Furthermore, we invited 10 papers of outstanding researchers from the world as additional invited sessions. All of the submitted papers received at least three independent reviews, which involved 81 TPC members, with the support of additional reviewers around the world. We also selected one outstanding paper for the Best Paper Award.

The technical program is organized into 12 oral presentation sessions which are held in two tracks and 2 invited sessions. In addition to these presentation sessions, the technical program also contains two keynotes by Divy Agrawal, Professor in the Dept. of Computer Science, University of California at Santa Barbara and by Tok Wang Ling, Professor in the Dept. of Computer Science, National University of Singapore. While the program covers a variety of topics on Big Data and Smart Computing, this year we made an effort to reflect the growing interests in future research trends and to extend our interest to practical applications.

We would like to express sincere thanks to the authors from all over the world for their prominent contributions. In addition to the authors, we are very thankful to all the TPC members, and external reviewers. The success of BigComp2014 would not have been possible without their hard work. We would also like to thank our sponsors, KIISE, and IEEE Computer Society for their supports of this successful event. We extend our sincere thanks to the General Co-Chairs, Prof. Jiawei Han and Prof. Jungyun Seo, and the other members of the organizing committee for facilitating various aspects of our work.

We hope that you enjoy the program of BigComp2014 and have a great time in Bangkok.

TPC Co-Chairs,
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<tr>
<th>TIME</th>
<th>Track 1</th>
<th>Track 2</th>
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<td>January 15 (Wednesday), 2014</td>
<td>09:00-18:00 Registration</td>
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<tr>
<td>09:40-11:40</td>
<td>Invited Session 1: Visualization (Chatrium Ballroom)</td>
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<td>12:00-13:00</td>
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<td>Opening Session (Chatrium Ballroom)</td>
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<td>Keynote Speech 2 (Chatrium Ballroom)</td>
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<td>Coffee Break</td>
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<td>16:00-18:00</td>
<td>Invited Session 2: Bio-Informatics (Chatrium Ballroom)</td>
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<tr>
<td>January 16 (Thursday), 2014</td>
<td>09:00-11:00 Session 1: Database Technology for Big Data (River 1)</td>
<td>Session 2: Collaborative Filtering and Recommendation (River 2)</td>
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<tr>
<td>11:20-13:00</td>
<td>Session 3: Cloud Computing and Services (River 1)</td>
<td>Session 4: Image/Multimedia Data Management (River 2)</td>
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<tr>
<td>13:00-14:00</td>
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<td>14:00-15:40</td>
<td>Session 5: Database in MapReduce Framework (River 1)</td>
<td>Session 6: Natural Language Processing and Information Retrieval (River 2)</td>
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<td>Coffee Break</td>
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<tr>
<td>16:00-17:40</td>
<td>Session 7: Big Data Analytics and Social Media (River 1)</td>
<td>Session 8: Machine Learning and AI for Big Data (River 2)</td>
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<td>18:30-21:00</td>
<td>Banquet (River 1 &amp; 2 &amp; 3)</td>
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<tr>
<td>January 17 (Friday), 2014</td>
<td>09:00-11:00 Session 9: Big Data and Smart Computing Applications (River 1)</td>
<td>Session 10: Networks for Big Data and Smart Computing (River 2)</td>
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<tr>
<td>11:00-11:20</td>
<td>Coffee Break</td>
<td>WILIS Workshop (River 3)</td>
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Keynote Speeches

January 15 (Wednesday), 2014

12:00-13:00

Keynote Speech 1: Emerging Technologies for Big Data Management and Analytics

Speaker: Dr. Divyakant Agrawal (Professor, Dept. of Computer Science, Univ. of California at Santa Barbara & Visiting Scientist, Advertising Infrastructure, Google Inc.)

Abstract:
During the past decade Google has been instrumental in establishing the broader research agenda in the context of Big Data management and Big Data analytics. With the advent of BigTable and related technologies (Google File System, Chubby Lock Service, and Paxos based Distributed Consensus protocol), Google initiated a data management revolution called NoSQL that has taken both data management researchers and practitioners by the storm. Numerous offerings, both proprietary and in the open-source domain, are now available that essentially mimic Google’s approach for managing Big Data. Similarly, Google’s MapReduce paradigm has resulted in the abandonment of established data analytics paradigm both within Google as well as in the broader commercial arena.

While academics and practitioners are enamored with Google’s Big Data technologies that are almost a decade old, Google is continuing to define the future research agenda in the context of Big Data. In particular, Google has recognized the deficiencies of NoSQL approach for data management especially in the context of data-centric products and services. In the recent past, Google has revealed a flurry of next-generation Big Data management technologies that provide stronger consistency guarantees similar to traditional database management solutions. Notable examples being Megastore, Spanner, and a distributed database management solution called F1. What is noteworthy is that all these technologies are inherently designed to be scalable and are multi-homed (i.e., can withstand large-scale datacenter outages). In the same vein, in the context of Big Data analytics, Google has developed key technologies such as: Dremel, Photon, Power-drill, and Mill-wheel. Dremel is a system that enables interactive analysis (as opposed to batched analysis using MapReduce) of Web-scale datasets. Photon is a system that enables fault-tolerant and scalable joining of continuous data streams (e.g., query logs with advertising click logs). Power-drill is an analytic engine that is capable of processing trillions of cells with a single mouse-click. Finally, Mill-wheel is a system that has been developed for fault-tolerant stream processing at Internet scale.

In this presentation, we will introduce and summarize these point solutions from the recent research papers published by the research and engineering teams at Google. The goal of this undertaking is to underscore that there is more to Big Data management and analytics than just BigTable and MapReduce especially in a broader research and development context of Big Data.

Short Biography

Dr. Divyakant Agrawal is a Professor of Computer Science and the Director of Engineering Computing Infrastructure at the University of California at Santa Barbara. His research expertise is in the areas of database systems, distributed computing, data warehousing, and large-scale information systems. From January 2006 through December 2007, Dr. Agrawal served as VP of Data Solutions and Advertising Systems at the Internet Search Company ASK.com. Dr. Agrawal has also served as a Visiting Senior Research Scientist at the NEC Laboratories of America in Cupertino, CA from 1997 to 2009. During his professional career, Dr. Agrawal has served on numerous Program Committees of International Conferences, Symposia, and Workshops and served as an editor of the journal of Distributed and Parallel Databases (1993-2008), and the VLDB journal (2003-2008). He currently serves as the Editor-in-Chief of Distributed and Parallel Databases and is on the editorial boards of the ACM Transactions on Database Systems and IEEE Transactions of Knowledge and Data Engineering. He has recently been elected to the Board of Trustees of the VLDB Endowment and elected to serve on the Executive Committee of ACM Special Interest Group SIGSPATIAL. Dr. Agrawal's research philosophy is to develop data management solutions that are theoretically sound and are relevant in practice. He has published more than 320 research manuscripts in prestigious forums (journals, conferences, symposia, and workshops) on wide range of topics related to data management and distributed systems and has advised more than 35 Doctoral students during his academic career. He received the 2011 Outstanding Graduate Mentor Award from the Academic Senate at UC Santa Barbara. Recently, Dr. Agrawal has been recognized as an Association of Computing Machinery (ACM) Distinguished Scientist in 2010 and was inducted as an ACM Fellow in 2012. He has also been inducted as a Fellow of IEEE in 2012. His current interests are in the area of scalable data management and data analysis in Cloud Computing environments, security and privacy of data in the cloud, and scalable analytics over social networks data and social media. He is currently on a sabbatical leave from UCSB and is serving as a Visiting Scientist in the Advertising Infrastructure Group at Google, Inc. in Mountain View, CA.
Keynote Speeches

January 15 (Wednesday), 2014

14:10-15:40

Keynote Speech 2 : Towards an Intelligent Keyword Search over XML and Relational Databases
Speaker : Dr. Tok Wang Ling (Professor, Dept. of Computer Science, National University of Singapore)

Abstract:
Keyword search has been the major form of retrieval method in information retrieval system, and has become an important way for novice to explore data-centric XML and relational databases (RDB). Recent years have witnessed many approaches proposed for keyword search over XML and RDB.

For XML keyword search, existing approaches are structure-based because they mainly rely on the exploration of the structure of XML data. These approaches can be classified as tree-based and graph-based search. The tree-based search is used when an XML document is modeled as a tree, i.e. with no ID references (IDREFs), while the graph-based search is used for XML documents with IDREFs. Almost all tree-based approaches are based on some variations of LCA (Least Common Ancestor) semantics such as SLCA and ELCA. Due to the unawareness of semantics in XML data, these LCA-based approaches suffer from several serious problems such as meaningless answers, duplicated answers, missing answers, etc.

For RDB keyword search, existing approaches are also structure-based because they rely on the foreign key-key references of RDB. These approaches can be classified as data graph based and schema graph based. Data graph based keyword search on relational databases takes a relational database as a data graph. Each node in the data graph represents a tuple in some relation in the database and each edge between two nodes in the data graph represents a foreign key-key reference between the two tuples represented by these two nodes. An answer to a keyword query is defined as a minimal connected subgraph which contains nodes that match keywords in the keyword query. On the other hand, schema graph based keyword search takes a relational database schema as a schema graph. Each node in the schema graph represents a relation in the database and each edge between two nodes in the schema graph represents a foreign key-key reference between the two relations represented by these two nodes. To answer a keyword query, a set of SQL queries are generated wrt possible interpretations of the keyword query. The results of the SQL queries are considered as the answers. Without considering semantics in the database, these RDB keyword search techniques suffer from the problems of retrieving incomplete, duplicated, and meaningless answers. Moreover, the retrieved answers are highly dependent on the schema of the relational database and difficult to understand their intuitive meanings.

In this presentation, we point out mismatches between answers returned and the common user expectations in keyword search in XML and RDB. We analyze these mismatches and discover that the main reasons are due to the unawareness of the semantics of object, relationship, and attribute of object/relationship in databases. We refer to them as ORA-semantics. To capture the ORA-semantics, we propose Object Relationship (OR) data graph for XML and Object Relationship Mixed (ORM) data graph for RDB. Based on OR data graph and ORM data graph, we achieve an intelligent keyword search over XML and RDB which avoids the problems mentioned above. To further facilitate the usability of keyword search, we also show our ongoing work to enhance the expressive power of keyword queries. Particularly, we enable users to explicitly indicate their search intentions with keywords matching relation name, attribute name, and tag name. We also handle recursive relationships and identifier-dependency relationships (IDD) in databases. We incorporate aggregate functions into keyword queries so that users can explore databases with aggregate queries.

Short Biography
Dr. Tok Wang Ling is a professor in the Department of Computer Science at the National University of Singapore. He was Head of IT Division, Deputy Head of the Department of Information Systems and Computer Science, and Vice Dean of the School of Computing. He received his PhD and M.Math, both in Computer Science, from University of Waterloo (Canada), and BSc in Mathematics from Nanyang University (Singapore). His research interests include Database Modeling, Semi-Structured Data Modeling, XML Twig Pattern Query Processing, and Keyword Query Processing over XML and Relational Databases. He serves/served on the steering committees of 4 international conferences, including ER and DASFAA. He served as Conference Co-chair of 10 international conferences, including ER 2004, DASFAA 2005, SIGMOD 2007, and VLDB 2010, and as Program Committee Co-chair of 6 international conferences, including DASFAA 1995, and ER 1998, 2003 and 2011. He received the ACM Recognition of Service Award in 2007, the DASFAA Outstanding Contributions Award in 2010, and the Peter P. Chen Award at ER 2011. He is an ER Fellow.
Technical Sessions

January 15 (Wednesday), 2014

[Invited Session 1] Visualization
Jan. 15, 09:40-11:40

Chair: Prof. Jinwook Seo (Seoul National University, Korea)

IS1.1 TrendFocus: Visualization of Trends in Financial News with Indicator Sets
Yik-Wai Ng and Huamin Qu (Hong Kong University, China)

IS1.2 Urban Trajectory Timeline Visualization
Zuchao Wan and Xiaoru Yuan (Peking University, China)

IS1.3 Octilinear Layouts for Metro Map Visualization
Pio Claudio and Sung-Eui Yoon (KAIST, Korea)

IS1.4 A Framework for Visual Analytics of Massive Complex Networks
Seok-Hee Hong (University of Sydney, Australia), Weidong Huang (University of Tasmania, Australia), Kazuo Misue (University of Tsukuba, Japan), and Wu Quan (University of Sydney, Australia)

[Invited Session 2] Bio-Informatics
Jan. 15, 16:00-18:00

Chair: Prof. Sun Kim (Seoul National University)

IS2.1 INGOT: Towards Network-driven In Silico Combination Therapy
Sourav S Bhomick, Huey Eng Chua, and Jie Zheng (Nanyang Technological University, Singapore)

IS2.2 An algorithm for identifying differentially expressed genes in multiclass RNA-seq samples
Jaehyun An, Kwangsoo Kim, and Sun Kim (Seoul National University, Korea)

IS2.3 Ensemble Learning for Robust Prediction of microRNA-mRNA Interactions
Seung Hak Yu (Seoul National University, Korea), Juho Kim (Korea University, Korea), Hyeyoung Min (Chung-Ang University, Korea), and Sungroh Yoon (Seoul National University, Korea)

IS2.4 The Online Diagnosis System for Sanger sequencing based genetic testing
Ke Sun, Yuet-Ping Yuen, Huating Wang, and Hao Sun (The Chinese University of Hong Kong, China)

IS2.5 Estimating the Number of Species in Metagenomes by Clustering Next-Generation Read Sequences
Ho-Sik Seok, Woonyoung Hong, and Jaebum Kim (Konkuk University, Korea)

January 16 (Thursday), 2014

[Session 1] Database Technology for Big Data
Jan. 16, 09:00-11:00

Chair: Prof. Jae-Gil Lee (KAIST, Korea)

S1.1 An Efficient Scheme for Continuous Skyline Query Processing over Dynamic Data Set
He Li and Jaesoo Yoo (Chungbuk National University, Korea)

S1.2 A Quality Enhancement of Crowdsourcing based on Quality Evaluation and User-Level Task Assignment Framework
Sooyoung Lee, Sehwa Park, and Seong Park (Sogang University, Korea)

S1.3 A Continuous Reverse Skyline Query Processing for Moving Objects
Jongtae Lim, Kyoungsoo Bok (Chungbuk National University, Korea), Yoonjoon Lee (KAIST, Korea), and Jaesoo Yoo (Chungbuk National University, Korea)

S1.4 A Privacy-aware Query Authentication Index for Database Outsourcing
Miyoung Jang, Min Yoon, and Jae-Woo Chang (Chonbuk National University, Korea)

S1.5 Hilbert-curve based Cryptographic Transformation Scheme for Protecting Data Privacy on Outsourced Private Spatial Data
Hyeong-Ill Kim, Seung-Tae Hong, and Jae-Woo Chang (Chonbuk National University, Korea)

[Session 2] Collaborative Filtering and Recommendation
Jan. 16, 09:00-11:00

Chair: Prof. Jee-In Kim (Konkuk University, Korea)

S2.1 Semantically-based Recommendation by using Semantic Clusters of Users’ Viewing History
Han-Gyu Ko, Eunae Kim, In-Young Ko (KAIST, Korea), and Deokmoon Chang (AIT in KT, Korea)

S2.2 An Improved Collaborative Filtering Algorithm Combining Content-based Algorithm and User Activity
Jiaqi Fan, Weimin Pan, and Lisi Jiang (Beijing University, China)

S2.3 Fast Collaborative Filtering with a k-Nearest Neighbor Graph
Youngki Park, Sungchan Park, Sang-goo Lee (Seoul National University, Korea), and Wooung Jung (Chungbuk National University, Korea)

S2.4 An Auxiliary Recommendation System for Repetitively Purchasing Items in E-Commerce
Yoon Kyoung Choi (Baewha Women’s University, Korea) and Sung Kwon Kim (Chung-Ang University, Korea)
Technical Sessions

S2.5 A Location-based Personalized News Recommendation
Yunseok Noh, Yong-Hwan Oh, and Seong-Bae Park (Kyungpook National University, Korea)

[Session 3] Cloud Computing and Services
Jan. 16, 11:20-13:00
Chair: Dr. Asta Zelenkauskaite (Drexel University, USA)
S3.1 Economical and Efficient Big Data Sharing with i-Cloud
Thepparit Banditwattanawong, Masawee Masdisornchote (Sripatum University, Thailand), and Patchong Uthayopas (Kasetsart University, Thailand)
S3.2 A Streaming Resource-based Connection Algorithm in CloudDMSS for Streaming Task Distribution
Seungho Han, Myoungjin Kim, Yun Cui, and Hanku Lee (Konkuk University, Korea)
S3.3 Distributed Compilation System for High-Speed Software Build Processes
Geunsik Lim, Minho Lee, R.J.W.E. Lahaye, and Young Ik Eom (Sungkyunkwan University, Korea)
S3.4 Energy-aware Erasure Codes using XOR Reference Matrix for SSD based RAID Systems
Mehdi Pirahandeh and Deok-Hwan Kim (Inha University, Korea)

[Session 4] Image/Multimedia Data Management
Jan. 16, 11:20-13:00
Chair: Prof. Soo-Mi Choi (Sejong University, Korea)
S4.1 Jigsaw Puzzle Image Retrieval via Pairwise Compatibility Measurement
Seou-Yong Jin, Sunwon Lee, Nur Aziza Azis, and Ho-Jin Choi (KAIST, Korea)
S4.2 Vision-based Animation of 3D Facial Avatars
Taehoon Cho, Jin-Ho Choi, Hyeon-Joong Kim, and Soo-Mi Choi (Sejong University, Korea)
S4.3 A Distributed Mechanism for Remote Rendering of Image Data
Mingyu Lim (Konkuk University, Korea) and Yunjin Lee (Ajou University, Korea)
S4.4 Edge-Preserving Denoising Method Using Variation Approach and Gradient Distribution
Wanhyun Cho, SeongChae Seo (Chonnam National University, Korea), and Jinho You (Doul Infortech, Korea)

[Session 5] Database in MapReduce Framework
Jan. 16, 14:00-15:40
Chair: Prof. Deok-Hwan Kim (Inha University, Korea)
S5.1 Scalable Community Detection from Networks by Computing Edge Betweenness on MapReduce
Seunghyeon Moon, Jae-Gil Lee, and Minseo Kang (KAIST, Korea)
S5.2 Processing Universal Quantification Queries Using MapReduce
Wafaa M. A. Habib, Hoda M. O. Mokhtar, and Mohamed El-Sharkawi (Cairo University, Egypt)
S5.3 Server Authentication for Blocking Unapproved WOW Access
Wookey Lee, Simon S. H. Park (Inha University, Korea), Jinho Kim (Kangwon National University, Korea), Chassung Lim (AhnLab, Korea), and Byeong-soo Jeong (Kyung Hee University, Korea)
S5.4 Cost-based Join Processing Scheme in a Hybrid RDBMS and Hive System
Taewon Kim, Haejin Chung, Wonsuk Choi, Jongmoo Choi, and Joonmo Kim (Dankook University, Korea)

[Session 6] Natural Language Processing and Information Retrieval
Jan. 16, 14:00-15:40
Chair: Prof. Guenther Pernul (University of Regensburg, Germany)
S6.1 Exploiting Out-of-Vocabulary Words for Out-of-Domain Detection in Dialog Systems
Seonghan Ryu, Donghyeon Lee, Gary Geunbae Lee (Pohang University of Science and Technology, Korea), Kyungduk Kim, and Hyungjong Noh (Samsung Electronics, Korea)
S6.2 Title Named Entity Recognition using Wikipedia and Abbreviation Generation
Youngmin Park, Sangwoo Kang, and Jungyun Seo (Sogang University, Korea)
S6.3 Sentence Completion Task using Web-scale Data
Kyusong Lee and Gary Geunbae Lee (Pohang University of Science and Technology, Korea)
S6.4 Analyzing Topic Drift in Query Expansion for Information Retrieval from a Large-scale Patent Database
Bashar Al-Shboul (The University of Jordan, Jordan) and Sung-Hyon Myaeng (KAIST, Korea)

[Session 7] Big Data Analytics and Social Media
Jan. 16, 16:00-17:40
Chair: Prof. Sourav S Bhowmick (Nanyang Technological University, Singapore)
S7.1 SoDA: Dynamic Visual Analytics of Big Social Data
Sabri Hassan, Johannes Sänger, and Günther Pernul (University of Regensburg, Germany)
S7.2 Analysis & Visualization on movie's popularity and reviews
Jaeboon Lee, Giseup Noh, and Chong-Kwon Kim (Seoul National University, Korea)
Technical Sessions

S7.3 Big Data Through Cross-Platform Interest-Based Interactivity
Asta Zelenkauskaite (Drexel University, USA) and Bruno Simões (Fondazione Graphitech, Italy)

S7.4 Realistic Team Formation using Navigation and Homophily
Kareem Kamel, Zahir Al Aghbari, and Ibrahim Kamel (University of Sharjah, UAE)

[Session 8] Machine Learning and AI for Big Data
Jan. 16, 16:00-17:40
Chair: Dr. Bashar Al-Shboul (University of Jordan, Jordan)

S8.1 Distributed Online Similarity Search in High Dimensional Space
Baohui Li (Beijing University, China), Kefu Xu, and Hongtao Xie (Chinese Academy of Science, China)

S8.2 Classifying Text Documents using Unconventional Representation
B S Harish, S V Aruna Kumar (S J College of Engineering & Technology, India), and S Manjunath (Central University of Kerala, India)

S8.3 A New Sampling Approach for Classification of Imbalanced Data sets with High Density
Jia Pengfei, Zhang Chunhui, and He Zhenyu (Harbin Institute of Technology, China)

S8.4 Denoising Predictive Sparse Decomposition
Long Qian and Xingjian Shi (Shanghai Jiao Tong University, China)

January 17 (Friday), 2014

[Session 9] Big Data and Smart Computing Applications
Jan. 17, 09:00-11:00
Chair: Prof. Keun Ho Ryu (Chungbuk National University, Korea)

S9.1 Semi-Automated Lifestyle Manager for Obesity
Young-Seob Jeong, Ho-Jin Choi (KAIST, Korea), Yong-Jin Kwon, Kyu-Chang Kang (ETRI, Korea), Je-Yeon Lee, Hye-Hyon Kim, Hyun-Ae Park, and Ju-Han Kim (Seoul National University, Korea)

S9.2 System proposal and CRS model design applying personal Information protection for BIG DATA analysis
Jong-Ho Lim, Il Kong Kim, Sungchul Bae, and Sung-Hyun Lee (Konkuk National University, Korea)

S9.3 Semantic Levels of Information Hierarchy for Urban Street Navigation
Divya Udyan J, Hyungseok Kim, Jee-In Kim (Konkuk University, Korea), and Keetsue Kim (Daum Corporation, Korea)

S9.4 Head Pose and Gaze Direction Tracking for Detecting a Drowsy Driver
In-Ho Choi and Yong-Guk Kim (Sejong University, Korea)

S9.5 Ensemble Method for Classification of High-Dimensional Data
Yongjun Piao, Hyun Woo Park, Cheng Hao Jin, and Keun Ho Ryu (Chungbuk National University, Korea)

[Session 10] Networks for Big Data and Smart Computing
Jan. 17, 09:00-11:00
Chair: Prof. Sanghwan Lee (Kookmin University, Korea)

S10.1 Router Designs for DDS: architecture and performance evaluation
Kyu-haeng Lee, Chong-kwon Kim (Seoul National University, Korea), Kyeong Tae Kim, and Won-tae Kim (ETRI, Korea)

S10.2 A New Data Transmission Mechanism in Aeronautical Ad Hoc Network
Zhong Dong, Zhu Yuan, You Tao, Duan Junhua (Northwestern Polytechnical University, China), and Kong Jie (Xi’an Shiyou University, China)

S10.3 Behavior Signature for Big Data Traffic Identification
Sung-Ho Yoon, Jun-Sang Park, Myung-Sup Kim (Korea University, Korea), ChaeTae Lim, and JunHyung Cho (KISA, Korea)

S10.4 Enhancing Concurrence in Parallel Random Network Coding
Seong-Min Choi, Heehoon Shin, and Joon-Sang Park (Hongik University, Korea)

Chair: Prof. Jong Weon Lee (Sejong University, Korea)

S11.1 Efficient Social Graph Augmentation Schemes for a Peer to Peer Social Networking Service
Taehyun Kim and Sanghwan Lee (Kookmin University, Korea)

S11.2 Performance Analysis and Improvement of JPV Primality test for Smart IC Cards
Hosung Jo and Heejin Park (Hanyang University, Korea)

S11.3 A Slim and Wide Multi-Touch Tabletop Interface and its Applications
Youngseok Ahn (Peratech, Korea), Jun Lee (Nanyang Technological University, Singapore), Hyungseok Kim, and Jee-In Kim (Konkuk University, Korea)

S11.4 Mobile Augmented Reality System for In-situ 3D Modeling and Authoring
Han Kyu Yoo and Jong Weon Lee (Sejong University, Korea)

S11.5 Self M2M based Wearable Watch Platform for Collecting Personal Activity in Real-time
Ki Eun Seong, Kyung Chun Lee, and Soon Ju Kang (Kyoungpook National University, Korea)
Workshop

[Session 12] Platform and Infrastructure for Smart Computing

Chair: Prof. Hwan-Gue Cho (Pusan National University, Korea)

S12.1 A Load Balancing Scheme using a Chord Algorithm for DDSB Service
Gunjae Yoon, Hoon Choi (Chungnam National University, Korea), and Won-Tae Kim (ETRI, Korea)

S12.2 Massive Parallelization technique for Random Linear Network Coding
Seong-Min Choi and Joon-Sang Park (Hongik University, Korea)

S12.3 Efficient Data Delivery based on Content-Centric Networking
Mahfuzur R. Bosunia, Anbin Kim (Hankuk University of Foreign Studies, Korea), Daniel P. Jeong (Hankuk Academy of Foreign Studies, Korea), Chanhong Park, and Seong-Ho Jeong (Hankuk University of Foreign Studies, Korea)

S12.4 Burstiness-aware I/O Scheduler for MapReduce Framework on Virtualized Environments
Sewoog Kim, Dongwoo Kang, Jongmoo Choi, and Junmo Kim (Dankook University, Korea)

S12.5 A Paravirtualized File System for Accelerating File I/O
Kihong Lee, Dongwoo Lee, and Young Ik Eom (Sungkyunkwan University, Korea)

Workshop

[WILIS Workshop]
Jan. 17, 09:00-11:00

Chair: Hanmin Jung (KISTI, Korea)

W.1 Why we should make an intelligent legal information system?
Dong Kwan Jo (National Assembly Library, Korea), Hanmin Jung, and Do-Heon Jeong (KISTI, Korea)

W.2 Integrated Search System Using Automatic Translation Technology, Translations and Providing Related Search Terms Extracted from Documents
Kyounguk Lee and Jungkwon Kim (DiQuest. Inc., Korea)

W.3 Process Enhancement of iLaw System
Jungwon Gim, Sa-kwang Song, Do-Heon Jeong, Jinhyung Kim, Myunggwon Hwang, and Hanmin Jung (KISTI, Korea)

W.4 Information Strategy Planning for the Next Generation iLaw System
Su Gon Cho, Seoung Bum Kim (Korea University, Korea), Jangwon Gim, Do-Heon Jeong (KISTI, Korea), Jieun Son (Korea University, Korea), Hanmin Jung (KISTI, Korea), Young Hoon Kim (Korea University, Korea), and Sa-kwang Song (KISTI, Korea)

W.5 Construction and Management of Multilingual Terminology for Intelligent Legal Service
Yong-Kwang Kim (Yonsei University, Korea), Do-Heon Jeong, Sa-kwang Song, Jungwon Gim, Myunggwon Hwang, Hanmin Jung, and Jinhyung kim (KISTI, Korea)
Conference Room Map

Lobby Floor

4th Floor

Chatrium Ballroom  Ravipa 1  Ravipa 2
                Ravipa 4  Ravipa 3
CHATRIUM Hotel Riverside Bangkok
28 Charoenkrung Road, Watprayakrai Bangkholame, Bangkok 10120 Thailand
Tel: +66 (0) 2307 8888 Fax: +66 (0) 2307 8899 E-mail: info.chrb@chatrium.com

Located on the banks of the majestic Chao Phraya River with the cultural and historical hub of Bangkok at its doorsteps, the 5-star Chatrium Hotel Riverside Bangkok offers a premium choice in Bangkok accommodation by blending spacious yet luxurious contemporary rooms and suites with warm and friendly Thai hospitality.

Winner of Trip Advisors 2012 Travelers' Choice Award for Best Hotel Bangkok, amongst all Bangkok Hotels, Thailand, our very large rooms and suites, all with large balconies and stunning views, combined with friendly and attentive service are just some of the simply remarkable features we offer as a 5-Star Hotel Bangkok.

Whether for business, leisure, meetings or just simply pleasure, our ability to tailor our products and services to your needs will certainly create a remarkable experience within the most remarkable Hotel in Bangkok.

Location
The magic, mystery and charm of the Chao Phraya River that flows through the inner city of Bangkok awaits when you stay at Chatrium Hotel Riverside Bangkok, ideally located in the cultural and historical hub of Bangkok while just 35 minutes from Suvarnabhumi International Airport. Complementary shuttle boat services make the city’s modern and efficient Bangkok Mass Transit System (BTS) a short but pleasant boat ride away. Close to the expressway and Central Business district, making both business and leisure activities a pleasure.
Travel Information

BANGKOK TRAVEL GUIDE

Bangkok (Thai: กรุงเทพฯ Krung Thep) is the capital of Thailand and, with a population of over eleven million inhabitants, by far its largest city. Its high-rise buildings, heavy traffic congestion, intense heat and naughty nightlife do not immediately give you a warm welcome — but don't let your first impression mislead you. It is one of Asia's most cosmopolitan cities with magnificent temples and palaces, authentic canals, busy markets and a vibrant nightlife that has something for everyone. For years, it was only a small trading post at the banks of the Chao Phraya River, until King Rama I, the first monarch of the present Chakri dynasty, turned it into the capital of Siam in 1782, after the burning of Ayutthaya by Burmese invaders.

Since then, Bangkok has turned into a national treasure house and functions as Thailand's spiritual, cultural, political, commercial, educational and diplomatic centre. Enjoy a memorable dinner cruise adrift the Chao Phraya River. Bask in the city’s warm, affluent glow at a skyscraping rooftop bar. Experience all the things – tuk-tuk ride, ladyboy show, Muay Thai (kickboxing) match, Thai massage – everyone always comes home talking about.

Climate

According to the World Meteorological Organization, Bangkok is the world's hottest city. Located just 14 degrees north of the Equator, Bangkok is sunny at any time of the year with temperatures over 30°C (86°F).
**Travel Information**

**Temple of Dawn**

Wat Arun, locally known as Wat Chaeng, is situated on the west (Thonburi) bank of the Chao Phraya River. It is believed that after fighting his way out of Ayutthaya, which was besieged by a Burmese army at the time, King Taksin arrived at this temple just as dawn was breaking. He later had the temple renovated and renamed it Wat Chaeng, the Temple of the Dawn. During his reign (Thonburi Period), Wat Chaeng was the chief temple, and it once enshrined the Emerald Buddha and another important Buddha image, the Phra Bang, both of which had been removed from Vientiane.

**Temple of Reclining Buddha**

Wat Pho (the Temple of the Reclining Buddha), or Wat Phra Chetuphon, is located behind the splendid Temple of the Emerald Buddha. It's the largest temple in Bangkok and famed for its huge and majestic reclining Buddha measured 46 metres long and covered in gold leaf. The Buddha's feet are 3 metres long and exquisitely decorated in mother-of-pearl illustrations of auspicious 'laksanas' (characteristics) of the Buddha.

**Temple of Emerald Buddha**

Wat Phra Kaew or the Temple of the Emerald Buddha (officially known as Wat Phra Sri Rattana Satsadaram) is regarded as the most important Buddhist temple in Thailand. Located in the historic centre of Bangkok, within the grounds of the Grand Palace, it enshrines Phra Kaew Morakot (the Emerald Buddha), the highly revered Buddha image meticulously carved from a single block of jade.

The Emerald Buddha (Phra Putta Maha Mani Ratana Patimakorn) is a Buddha image in the meditating position in the style of the Lanna school of the north, dating from the 15th century AD.
Travel Information

The Grand Palace

A strict dress code applies. The Grand Palace with The Temple of the Emerald Buddha is Thailand's most sacred site. Visitors must be properly dressed before being allowed entry to the temple. Men must wear long pants and shirts with sleeves (no tank tops. If you're wearing sandals or flip-flops you must wear socks (in other words, no bare feet.) Women must be similarly modestly dressed. No see-through clothes, bare shoulders, etc. If you show up at the front gate improperly dressed, there is a booth near the entrance that can provide clothes to cover you up properly (a deposit is required).

Floating market

Even though transactions are more concerned with tourists rather than locals these days, the floating market;boats are still piled high with tropical fruit and vegetables, fresh, ready-to-drink coconut juice and local food cooked from floating kitchens located right on the boat.

To enjoy the atmosphere without haggling over prices, try relaxing on a guided boat tour of Damnoen Saduak market. Floating markets are Taling Chan Market, Bang Ku Wiang Market, Tha Kha, and Damnoen Saduak.

Chinatown

Bangkok’s Chinatown is a popular tourist attraction and a food haven for new generation gourmands who flock here after sunset to explore the vibrant street-side cuisine. At day time, it’s no less busy, as hordes of shoppers descend upon this 1-km strip and adjacent Charoenkrung Road to get a day’s worth of staple, trade gold, or pay a visit to one of the Chinese temples. Packed with market stalls, street-side restaurants and a dense concentration of gold shops, Chinatown is an experience not to miss. The energy that oozes from its endless rows of wooden shop-houses is plain contagious – it will keep you wanting to come back for more.
Travel Information

Khao San Road

If Bangkok is a city where East greets West, then Khao San Road is the scene of their collision, the place where they jostle for superiority and poke one another in the eye. With travellers from every corner of the modern world, sleek clubs playing sophisticated sounds, eclectic market stalls, converted VW cocktail bars, and foods tamed to suit the Western palate, it may seem clear who won the fight. However, whether you're a hard-up farang (foreigner) or open-minded Thai, its irrepressible energy and carefree vibe makes it well worth a visit.

Bangkok golf

Bangkok golf courses offer great value for money with many excellent golf clubs offering a high level of service at very competitive prices. Golf tours and holidays have grown rapidly across Thailand, particularly in Bangkok where there are scores of delightful golf courses and clubs within easy reach of the city centre. Most of them have been renovated and developed to world-class standards. Indeed, Bangkok is now a hub of international golfing activities and offers the perfect combination of city and leisure facilities. Excellent clubhouse amenities, challenging scenic courses and smiling, friendly service ensure that a golfing holiday in Bangkok is a golfer's paradise.

Calypso Ladyboy Show

An explosion of lights, sounds and pouts, the famous Calypso Ladyboy Cabaret is a breathless blend of incredible sets, glittering costumes and thrilling musical acts. Despite what you have seen or heard about Thai ladyboys, these performers are good at what they do best: looking and acting just like the real thing. You will be left dazzled by the show and quite possibly smitten with the many gender-straddling performers. Meet 'Marilyn Monroe', 'Michael Jackson' and Portuguese-Brazilian 1940s starlet 'Carmen Miranda', along with a
Travel Information

string of their diva friends. This is an entertaining night out for families, couples and any curious souls expecting to be surprised.

Siam Niramit Show

Siam Niramit combines an authentic Thai buffet with a world-class stage show depicting Thailand's historical and spiritual heritage. With over 150 dazzling performers and state-of-the-art special effects, it’s a captivating journey. The first act describes how Siam became a cross-roads where civilisations met, the second how karma binds Thai people, and the final act shows how religious ceremony earns Thai people merit in this life. In addition to the show, you can visit replica villages from the country's rural regions and buy Thai handicrafts.

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