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Xiaofang Zhou Jianzhong Li
Heng Tao Shen Masaru Kitsuregawa
Yanchun Zhang (Eds.)

Frontiers of WWW Research and Development – APWeb 2006

8th Asia-Pacific Web Conference
Harbin, China, January 2006
Proceedings



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Message from the General Chair

It is our great pleasure to welcome you to Harbin for the 8th Asia Pacific Web Conference (APWeb 2006). The winter snow festival is one of the reasons to have chosen January and the setting of beautiful Songhuajiang Riverside.

Since its start in 1998, APWeb has been a premier conference on theoretical and practical aspects of Web engineering in the Asia Pacific region. Previous APWeb conferences were held in Beijing (1998), Hong Kong (1999), Xi'an (2000), Changsha (2001), Xi'an (2003), Hangzhou (2004) and Shanghai (2005).

Program Co-chairs Jianzhong Li and Xiaofang Zhou put in a lot of effort in the difficult and highly competitive selection of research papers. APWeb 2006 attracted more than 400 papers from 23 countries and regions. Industrial Program Chair Xiaowei Kan, Panel and Tutorial Chair Athman Bouguettaya, and Demo Chairs Yoshiharu Ishikawa and Haiyang Wang all contributed significantly to make an attractive program. We thank David Abramson, Ding-Zhu Du, Ling Liu and Justin Zobel for their keynotes as the highlights of the conference.

So many people worked hard to make APWeb 2006 successful. The excellent conference and banquet places were managed by Local Arrangement Chair Hong Gao. Publicity Chairs Chengfei Liu and Ge Yu promoted this conference. Treasurer Qing Li played an important role in financial management.

This year, in addition to the conference, we held various workshops. Four workshops on emerging topics were organized, which were selected and coordinated by Workshop Chair Jeffrey Yu. The Workshop on Metropolis/Enterprise Grid and Applications (MEGA) was organized by Minglu Li. The Workshop on Sensor Network (IWSN) was run by Xiaohua Jia, Jinbao Li, and Yingshu Li. The Workshop on Web-based Internet Computing for Science and Engineering (ICSE) was run by Jack Dongarra and Jun Ni and the Workshop on XML Research and Applications (XRA) was organized by Wei Wang and Raymond Wong.

Publication Chair Heng Tao Shen did a great job of putting together an extensive volume, which contains more than 1000 pages.

So many individuals contributed toward the conference, especially Xiaofang Zhou, who took care of all aspects of the conference.

We hope that you enjoy these proceedings.

November 2005

Masaru Kitsuregawa
APWeb 2006 General Chair

Message from the Program Co-chairs

This volume contains papers selected for presentation at the 8th Asia Pacific Web Conference (APWeb 2006), which was held in Harbin, China, January 16-18, 2006.

APWeb 2006 received 413 submissions. After a thorough review process for each submission by the Program Committee (with 148 PC members!) and specialists recommended by Program Committee members, APWeb accepted 56 regular papers and 42 short papers (the acceptance rates are 14% and 11%, respectively). This volume also includes invited keynote papers, presented by four leading experts at APWeb 2006: David Abramson (Monash University), Ding-Zhu Du (University of Minnesota), Ling Liu (Georgia Institute of Technology) and Justin Zobel (Royal Melbourne Institute of Technology). Other papers in this volume include selected papers for special sessions on ICT advances for water resources management organized by Yanchun Zhang (Victoria University of Technology), industry papers organized by Xiaowei Kan (Ricoh Co., Ltd.), and demo papers organized by Yoshiharu Ishikawa (Tsukuba University) and Haiyang Wang (Shandong University).

Four workshops were held in conjunction with APWeb 2006. The workshop papers were compiled in a separate volume of proceedings, also published by Springer in its *Lecture Notes in Computer Science* series.

The conference received financial support from the National Natural Science Foundation of China, Australian Research Council Research Network in Enterprise Information Infrastructure (EII), Harbin Institute of Technology, Heilongjiang University, Hohai University and Yellow River Conservation Commission. We, the conference organizers, also received help and logistic support from the University of Queensland, Harbin Institute of Technology, Heilongjiang University, City University of Hong Kong, the Web Information Systems Engineering Society (WISE Society), and the Conference Management Toolkit Support Team at Microsoft.

We are grateful to Hong Gao, Winnie Cheng, Miranda Lee, Xin Zhan, Wenjie Zhang, Yanchun Zhang, Qing Li, Rikun Wang, Ken Deng, Helen Huang, Sai Sun and other people for their great effort in supporting the conference organization. Finally, we would like to take this opportunity to thank all Program Committee members and external reviewers for their expertise and help in evaluating papers, and to thank all authors who submitted their papers to this conference.

November 2005

Jianzhong Li and Xiaofang Zhou
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