





## Welcome from the General Chairs

It is our pleasure to welcome you to Beijing, the bustling capital of the People's Republic of China, for the *24<sup>th</sup> IEEE International Conference on Software Maintenance* (ICSM 2008). ICSM is the premier international event in the software maintenance field for participants from academia, government, and industry to share ideas and experiences for solving critical software maintenance problems.

This is the first time ICSM has been held in China. Beijing is a modern, friendly, world-class city of more than 15 million people, and host to the 2008 Summer Olympics. With numerous scenic and cultural attractions, visiting Beijing and China for ICSM 2008 promises to be an unforgettable experience.

We first started publicizing the ICSM 2008 conference at ICSE 2006 in Shanghai – well over two years ago. Since then we have done our utmost to ensure that as many people as possible knew about ICSM 2008. The badges we created (shown at right) and wore at events around the world for the last few years are a testament to this roving publicity effort. Jens Krinke, Gustavo Rossi, and Qianxiang Wang also worked as Publicity Chairs to raise awareness of the conference.



ICSM 2008 is actually a full week of events. It includes the main ICSM technical and social programs, the two co-located events: the *8<sup>th</sup> IEEE International Working Conference on Source Code Analysis and Manipulation* (SCAM 2008) and the *10<sup>th</sup> IEEE International Symposium on Web Site Evolution* (WSE 2008), and several new additions to the main ICSM program: the *Software Technology and Engineering Practice* (STEP) workshops, the *Frontiers of Software Maintenance* (FoSM) track, and the special *Far East Track* sessions.

Putting together a large event like ICSM 2008 takes the sustained effort of a large group of volunteers. First and foremost, we would like to thank the Program Chairs, Hong Mei and Ken Wong, for their excellent technical program. They worked diligently throughout the entire process to solicit submissions, manage the complex review procedure, and carefully select the final proposals for inclusion in the conference program.

We would also like to particularly thank Ken Wong and his team at the University of Alberta for designing and maintaining the excellent ICSM 2008 conference Web site. They kept the site current at all times – in both English and Chinese!

The Finance Chair, Dave Binkley, was a huge help to the conference by managing our finances. This is the first time that ICSM has shared a joint budget and administrative structure with the co-located events, which made an already challenging task even more complicated. Dave also worked closely with Elliot Chikofsky and the Reengineering Forum for the online conference reservation system, which includes handling transactions in multiple currencies between several organizations in different countries.

The team from Peking University, led by Lu Zhang and Qianxiang Wang, superbly handled the local arrangements for the conference. They worked closely with Ingrid Zhang of the Beijing Friendship Hotel and Shihong Huang of Florida Atlantic University to ensure that the hotel

contract was in place, that the meeting facilities were setup and ready, and that the social events were smoothly organized for our enjoyment.

The ICSM 2008 proceedings were more work than usual this year because they also include a separate volume for papers from the new *Frontiers of Software Maintenance* track. We are very appreciative of Hausi Müller for leading the FoSM effort, and for the Proceedings Chair, Andrea De Lucia, for working with Causal Productions and the IEEE Computer Society to ensure that the papers for both ICSM and FoSM were collected, processed, and published on time.

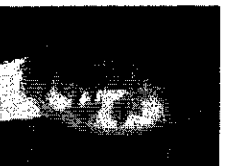
ICSM 2008 is made richer for the participation of our two co-located events: SCAM 2008 (led by Giulio Antoniol) and WSE 2008 (led by Massimiliano Di Penta). Each of these events required considerable organization in their own right. We are pleased that coordinating these efforts to form a unified maintenance week worked so well.

We would be remiss in not thanking several groups that provided the conference with behind-the-scenes guidance. The first is the ICSM Steering Committee, led by Rainer Koschke. The second is the IEEE Computer Society staff, and in particular Tom Baldwin, for their aid in managing all aspects of ICSM 2008. This year there were a great many unique issues that had to be addressed to host the conference in China. We could not have done it without their help.

ICSM continues to enjoy the sponsorship of the IEEE Computer Society. This year we were also financially aided by our donors: OW2 Consortium, Beijing Simpleware Tech, and Shandong CVICSE Middleware. All aspects of the conference benefit from the time and effort provided by our supporting organizations: Peking University (China), the Florida Institute of Technology (USA), the University of Alberta (Canada), the China Computer Federation, and Kent State University (USA).

Last but not least, we would like to thank you – the participants at ICSM 2008 who have traveled to China to participate in this groundbreaking event. Enjoy the ICSM 2008 technical and social program in the magnificent atmosphere of Beijing!

**Fuging Yang**



*Peking University*  
China

**Scott Tilley**



*Florida Institute of Technology*  
USA

**General Chairs, ICSM 2008**



Beijing, China — September 28 to October 4, 2008  
<http://www.icsm2008.org/>

## Welcome from the Program Chairs

The International Conference on Software Maintenance (ICSM) has grown since its start in 1983 to become the premier international forum for researchers and practitioners to address key challenges facing the software maintenance community. With an exciting program scheduled over five days, ICSM 2008 is the centerpiece of a full week of software maintenance events.

ICSM 2008 received 156 research paper submissions from all over the world. Based on 472 reviews from 78 Program Committee members and another 62 external referees, we selected 40 high-quality papers for publication in the proceedings and presentation in 14 balanced technical sessions at the conference. As staple events at ICSM, we also have the Doctoral Symposium to highlight ongoing or recently completed Ph.D. research, the Industry Track with reports of industrial experiences, and Tool Demonstrations to exhibit innovative research prototypes.

Special attractions in the program this year are *Software Technology and Engineering Practice* (STEP) Workshops, the *Frontiers of Software Maintenance* (FoSM) series, the Far East Track, and the Education Session. Three STEP workshops provide superb occasions to discuss research in service-oriented systems, advanced tool construction, and open-source communities. The FoSM series of 16 invited paper presentations gather leading international experts to overview the past, present, and future of key research areas related to software maintenance. The Far East Track adds a distinctive, regional element to ICSM 2008, focusing on software maintenance research, practices, and challenges from Far East Asia. The Education Session offers an informal discussion of issues in training the next generation of software maintainers.

Last, but not least, we are excited to have two keynote addresses. Harry Sneed (University of Regensburg, Germany and ANECON GmbH, Austria), a long-time practitioner and contributor to ICSM, offers his insights on outsourcing software maintenance work. Ji-Feng He (East China Normal University, China), a distinguished leader in software research across China, describes an approach to address testing and maintenance problems using formal methods. Over the years, both of these speakers have made significant strides in the evolution of software systems.

A strong and diverse conference program would not be possible without the combined efforts of many people. We are deeply grateful to all those who contributed. The quality of the papers hinges on a systematic process of paper submission, review, and final editing. Thanks go to all the authors for their valuable contributions across all tracks. Also, we were impressed by the diligent and thoughtful reviews from the Program Committee members and external referees on the research papers. Indeed, they returned every assigned review. We thank them for all their insightful comments and suggestions, on behalf of all the authors as well as ourselves.

The program is elevated by the feats of several track chairs and their reviewers based on 28 submissions. We wish to acknowledge Gerardo Canfora and Kostas Kontogiannis for organizing a splendid Doctoral Symposium, Jochen Hartmann and Vipul Shah for creating an engaging Industry Track, Rudolf Ferenc and Holger Kienle for producing a stimulating set of Tool Demonstrations, Dennis Smith and Ladan Tahvildari for establishing the STEP Workshops, and Liz Burd and Mehmet Orgun for arranging the Education Session. Having these track chairs

spread around four continents posed a coordination challenge, but lends an international perspective.

Invited contributions take an extra effort to recruit participants and organize their papers. We are particularly thankful of Hansi Müller, who was instrumental in receiving most commitments for the FoSM series as early as September 2007, during ICSM 2007 in Paris. His enthusiasm and belief in the maintenance research community made a convincing argument to feature FoSM prominently in the conference with special time slots and a separate volume. We also extend our gratitude to Hongji Yang and Ying Zou for selecting, contacting, and following through with six speakers from across the Far East.

To handle the many paper submissions, we are indebted immensely to Michael Collard. Behind the scenes, his care, responsiveness, guidance, and judgment were key to a smoothly running electronic submission, review, and notification process. He developed several customizations to improve the flexibility and usability of the online system. Also, we acknowledge the Department of Computer Science at Kent State University (USA) for their continuous support of the server on which the system runs.

On the conference Web site and publicity materials, we are particularly appreciative of the volunteer work in Chinese translation by Xin Li, Zhenchang Xing, and Dabo Sun at the University of Alberta (Canada) and Shihong Huang of Florida Atlantic University (USA). Their knowledge of software engineering along with Chinese culture was crucial to representing ICSM effectively to research communities in China.

At the conference itself, we wish to thank all those who helped to moderate discussions diplomatically, and keep the various activities running on time, including session chairs, workshop organizers, and again the track chairs.

As Program Chairs, we are involved in many aspects of organizing a conference, involving coordination with chairs in Publicity, Proceedings, Local Arrangements, and Finance. This is only made achievable by General Chairs overseeing and supporting the whole team. In particular, we thank Fuging Yang for her leadership, and Scott Tilley for his incredible fortitude in making it all work.

Best wishes, enjoy the conference, and have fun in Beijing!

**Hong Mei**



*Peking University*  
China

**Kenny Wong**



*University of Alberta*  
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**Program Chairs, ICSM 2008**

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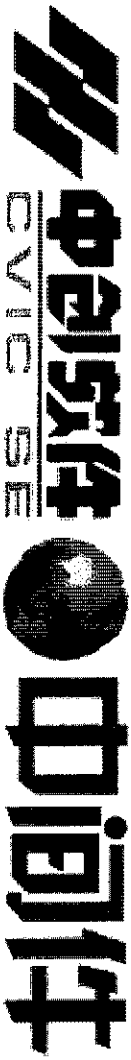
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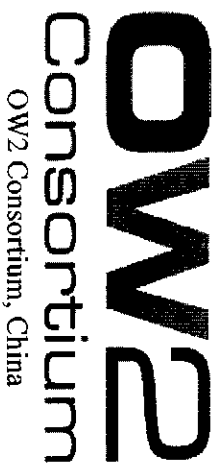


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