



C³S²E-09



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C³S²E

Montreal, 2009



Desai, Lueng

C³S²E '09 Proceedings

Concordia University
May 19-21, 2009

Editors: Bipin C. Desai, Carson K. Leung
Program Chairs: Carson K. Leung, Olga Ormandjieva



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Proceedings
of
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General Chair: Bipin C. Desai

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Preface

C³S²E-09 is the second meeting of a series of annual meetings to bring together academics and practitioners in the area of computer science and software engineering. The 1st edition of C³S²E was held in Montreal and like this second meeting, was hosted by the Department of Computer Science and Software Engineering, The Faculty of Engineering and Computer Science and Concordia University.

The review process and the acceptance rates and other details are reported by the program co: chairs in the forward.

I am grateful to a number of people without whom we would not have been able to put the program together. These include our program co:chairs Carson K. Leung and Olga Ormandjieva, the program committee which has done an excellent job; we got 3.4 reviews per paper on the average. I would also like to thank the many external reviewers who have helped "in the background," and who made sure that we could stick with our schedule. I am grateful to the high number of authors who have considered C³S²E as the target for their work. Even although we could not accommodate every submission, we hope that the reviews can be of help to many people.

I would like to acknowledge the support of the Vice-rector research, School of Graduate Studies, Faculty of Engineering and Computer Science for their support and in making the local arrangements. I am also grateful to Bernard Rous and Craig Rodkin of ACM and to ACM and BytePress for publishing these proceedings. Last, not least, I am indebted to the staff of Concordia University for making this event a reality.

Bipin C. Desai
General Chair

Forward

The Canadian Conference on Computer Science and Software Engineering (C³S²E) was established in 2008. C³S²E 2009 is the second annual meeting in the C³S²E conference series and is held in Montréal, Québec, Canada, during May 19-21, 2009. The conference aims to address the need of the academic community in computer science and software engineering. It brings together academics, government and industry professionals to discuss recent progress and challenges in a broad range of areas in the field of computer science and software engineering such as algorithms and theory, artificial intelligence, bioinformatics, computer architecture, computer graphics, computer security, computer vision, data mining, databases, image processing, information retrieval, machine learning, as well as software engineering. C³S²E 2009 also serves as a platform for theoreticians and practitioners to exchange their original research ideas on academic or application aspects of computing and engineering of software systems, present their new findings on theoretical or practical aspects of computer science and software engineering, share their experiences on integrating new technologies into products and applications, discuss their work on applying computing and software engineering to real-life situations, describe their development and operations of challenging computing related systems, and identify unsolved challenges.

Although it is the second time C³S²E is held, this comprehensive conference has grown from a Canadian conference into an international conference. For C³S²E 2009, we have made the following positive changes to enhance the conference. First, we have recruited many international experts in various areas of computer science and software engineering to join our team of international program committee. As a result, our Program Committee consists of professionals from different parts of the world including Australia, Canada, Hong Kong, Italy, Japan, Netherlands, Portugal, South Korea, UAE, UK, and USA. This committee has done an excellent job in finishing the single-blind review and on-line double-blind debate processes in record time. For example, on average, about 86% of reviews were submitted by the due date and about 3.5 reviews were received for each paper. Second, we have attracted many high-quality papers submitted by authors from various countries including Canada, Germany, Ireland, UK, and USA. The paper selection process was thorough and competitive. On average, each paper was refereed by at least three reviewers, and less than 17% of submissions were accepted as full research papers. Third, in addition to keeping the traditional sessions for research papers and student posters, we have also set up a session for position papers. This allows authors to give their opinions and vision on exploring new concepts and research directions. This year, we have a rich program that spans over three days (May 19-21, 2009). It consists of two invited talks (by Alain Abran from École de Technologie Supérieure (ÉTS) and Laks V.S. Lakshmanan from The University of British Columbia (UBC)), ten full and nine short research papers, five position papers, and ten student posters.

This conference would not have been possible without the help and effort of many people and organizations. We thank ACM Press, BytePress, Canadian Information Processing Society (CIPS), Concordia University, and The University of Manitoba for their support of this conference. We also express our thanks to Bipin C. Desai, the General Chair of C³S²E 2009, for his valuable advice and suggestions towards the conference. We are grateful to members of the Program Committee for their professionalism and dedication in the process of judging the contributions of papers and producing constructive comments to the authors.

Carson K. Leung, The University of Manitoba, Winnipeg, MB, Canada
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Program Chairs of C³S²E 2009

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