

# Proceedings

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*ICIS 2007*

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# Message from the Conference Chairs



It is our great pleasure to extend a welcome to all of you who are participating in the 6<sup>th</sup> IEEE/ACIS International Conference on Computer and Information Science (ICIS 2007) and the 1st International Workshop on e-Activity (IWEA 2007), which are being jointly held at the Rydges Melbourne Hotel, Melbourne, Australia. The conference is sponsored by the IEEE Computer Society, USA and the International Association for Computer and Information Science (ACIS), USA.

This conference is aimed at discussing with all of you the wide range of problems encountered in present and future high technologies. The purpose of ICIS 2007 and IWEA 2007 is to bring together researchers and practitioners from industry, academia, and government to the advanced state of the art in Computer and Information Science and to encourage wider collaboration between academics and industries.

We would like to thank Professor Kate Smith-Miles, our Keynote Speaker who is Head of School of Engineering and Information Technology at Deakin University, Australia; the program chairs; the publicity chairs; the members of our Program Committee for their hard work in this conference; and the administrative staff at the IEEE Computer Society and ACIS Headquarters.

We hope you enjoy the conference and workshop and your stay in Melbourne!

**Roger Y. Lee**  
*Conference Co-Chair*  
*Central Michigan University, USA*

**Morshed U. Chowdhury**  
*Conference Co-Chair*  
*Deakin University, Australia*

# Message from the Program Chairs



Welcome to ICIS 2007 and IWEA 2007!

On behalf of the Program Committee of the 6th IEEE/ACIS International Conference on Computer and Information Science (ICIS 2007) and the 1st International Workshop on e-Activity (IWEA 2007), it is our honor to welcome you to ICIS 2007 and IWEA 2007 in Melbourne, Australia. It has been our pleasure as Program Committee co-chairs and workshop chair to help organize this year's scientific and technical programs and the technical proceedings. We hope these proceedings will serve as a valuable reference for the computer and information science research community.

ICIS 2007 and IWEA 2007 bring together researchers, scientists, engineers, industry practitioners, and students to exchange and share their experiences, new ideas, and research results about all aspects of computer and information science. ICIS 2007 and IWEA 2007 aim to facilitate cross-fertilizations among, and has solicited papers in, the key technology enabling areas, including Software and Information Engineering, Communications Systems and Networks, Internet Technology and Applications, Mobile/Wireless Computing, Visual and Multimedia Computing, Image, Acoustic, Speech, and Signal Processing, Data Mining, Knowledge Discovery and Artificial Intelligence, Web Engineering and Applications, Intelligent Agent Technology, Software/Middleware Architectures, Parallel and Distributed Computing, and Technology Education and Training.

We received 392 papers from the scientific community in 28 different countries all over the world. By and large, each paper was reviewed by two to three members of the International Program Committee and, when necessary, by additional reviewers. A large number of the papers were high-quality submissions. After the completion of the peer-review process, 187 papers were selected for presentation at the conference.

We would like to express our sincere appreciation to the following people for contributing to the success of this conference: Professor Kate Smith-Miles—our Keynote Speaker; the Local Organizing co-chairs; Registration chairs; and the International Program Committee members who rose beyond the call of duty, contributing a large percentage of their time; the referees who accepted the last-minute requests for extra reviews; the session chairs who preside over the sessions; all the authors, attendees, and presenters who really made this conference possible and successful.

Finally, we hope you enjoy the technical programs of ICIS 2007 and IWEA 2007 and enjoy the various attractions Melbourne has to offer!

**Sid Ray**  
**Thuy Le**

*ICIS 2007 Program Co-Chairs*

**Tokuro Matsuo**  
**Takayuki Fujimoto**

*IWEA 2007 Program Co-Chairs*