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# Software Engineering and Computer Systems

Second International Conference, ICSECS 2011  
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## **Message from the Chairs**

The Second International Conference on Software Engineering and Computer Systems (ICSECS 2011) was co-sponsored by Springer is organized and hosted by the Universiti Malaysia Pahang in Kuantan, Pahang, Malaysia, from June 27-29, 2011, in association with the Society of Digital Information and Wireless Communications. ICSECS 2011 was planned as a major event in the software engineering and computer systems field, and served as a forum for scientists and engineers to meet and present their latest research results, ideas, and papers in the diverse areas of data software engineering, computer science, and related topics in the area of digital information.

This scientific conference included guest lectures and 190 research papers that were presented in the technical session. This meeting was a great opportunity to exchange knowledge and experience for all the participants who joined us from all over the world to discuss new ideas in the areas of software requirements, development, testing, and other applications related to software engineering. We are grateful to the Universiti Malaysia Pahang in Kuantan, Malaysia, for hosting this conference. We use this occasion to express thanks to the Technical Committee and to all the external reviewers. We are grateful to Springer for co-sponsoring the event. Finally, we would like to thank all the participants and sponsors.

Jasni Mohamad Zain  
Wan Maseri Wan Mohd  
Hocine Cherifi

# Preface

On behalf of the ICSECS 2011 Program Committee and the Universiti Malaysia Pahang in Kuantan, Pahang, Malaysia, we welcome readers to proceedings of the Second International Conference on Software Engineering and Computer Systems (ICSECS 2011).

ICSECS 2011 explored new advances in software engineering including software requirements, development, testing, computer systems, and digital information and data communication technologies. It brought together researchers from various areas of software engineering, information sciences, and data communications to address both theoretical and applied aspects of software engineering and computer systems. We do hope that the discussions and exchange of ideas will contribute to advancements in the technology in the near future.

The conference received 530 papers, out of which 205 were accepted, resulting in an acceptance rate of 39%. These accepted papers are authored by researchers from 34 countries covering many significant areas of digital information and data communications. Each paper was evaluated by a minimum of two reviewers.

We believe that the proceedings document the best research in the studied areas. We express our thanks to the Universiti Malaysia Pahang in Kuantan, Malaysia, Springer, the authors, and the organizers of the conference.

Jasni Mohamad Zain  
Wan Maseri Wan Mohd  
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