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Distributed Computing in Sensor Systems

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Proceedings

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Message from the General Co-chairs

We are pleased to welcome you to Santorini Island, Greece, for DCOSS 2008, the IEEE International Conference on Distributed Computing in Sensor Systems, the fourth event in this series of annual conferences. The DCOSS meetings cover the key aspects of distributed computing in sensor systems, such as high-level abstractions, computational models, systematic design methodologies, algorithms, tools, and applications. This meeting would not be possible without the tireless efforts of many volunteers. We are indebted to the DCOSS 2008 Program Chair, Sotiris Nikolettseas, for overseeing the review process, composing the technical program, and making the local arrangements. We appreciate his leadership in putting together a strong and diverse Program Committee, whose members cover the various aspects of this multidisciplinary research area. We would like to thank the Program Committee Vice Chairs, Bogdan Chlebus, Bhaskar Krishnamachari, and David B. Johnson, as well as the members of the Program Committee, the external referees consulted by the PC, and all of the authors who submitted their work to DCOSS 2008. We also wish to thank the keynote speakers for their participation in the meeting.

Several volunteers contributed significantly to the realization of the meeting. We wish to thank the organizers of the workshops collocated with DCOSS 2008 as well as the DCOSS Workshop Chair, Koen Langendoen, for coordinating workshop activities. We would like to thank Yang Yu and Thiemo Voigt for their efforts in organizing the poster session and demo session, respectively. Special thanks goes to Kay Romer for organizing the Work-in-Progress session and to Luis Almeida for the DCOSS competition event. Special thanks also goes to Tian He and Cristina Pinotti for handling conference publicity, and to Zachary Baker for his assistance in putting together this proceedings volume. Many thanks also go to Animesh Pathak for maintaining the conference webpage and Germaine Gusthiot for handling the conference finances.

We would like to especially thank Jose Rolim, DCOSS Steering Committee Chair, for inviting us to be the General Chairs. His invaluable input in shaping this conference series and his timely intervention in resolving meeting-related issues are gratefully acknowledged.

Finally, we would like to acknowledge the sponsors of DCOSS 2008. Their contributions are always a key enabler of a successful conference. The research area of sensor networks is rapidly evolving, influenced by fascinating advances in supporting technologies. We sincerely hope that this conference series will continue to serve as a forum for researchers working in different, complementary areas of this multidisciplinary field to exchange ideas and interact, cross-fertilizing research on the algorithmic and foundational side, as well as of high-level approaches and the

more applied and technological issues related to the tools and applications of wireless sensor networks.

We hope you enjoy the meeting.

June 2008

Tarek Abdelzaher
Viktor K. Prasanna

Message from the Program Chair

This proceedings volume contains the accepted papers of the Fourth International Conference on Distributed Computing in Sensor Systems. DCOSS 2008 received a record of 116 submissions to its three tracks covering the areas of Algorithms, Systems, and Applications. During the review procedure at least two reviews for all papers and three (or more) reviews for most papers were solicited. After a fruitful exchange of opinions and comments during the final stage, 29 papers (25% acceptance ratio) were accepted as regular papers. Also, 12 papers were accepted as short papers.

The research contributions in these proceedings span diverse important aspects of sensor networking, including energy management, communication, coverage and tracking, time synchronization and scheduling, key establishment and authentication, compression, medium access control, code update, and mobility. A multitude of novel algorithmic design and analysis techniques, systematic approaches, and application development methodologies are proposed for distributed sensor networking, a research area in which complementarity and cross-fertilization are of vital importance.

I would like to thank the three Program Vice Chairs, Bogdan Chlebus (Algorithms), David B. Johnson (Systems), Bhaskar Krishnamachari (Applications) for agreeing to lead the review process in their Track and for an efficient and smooth cooperation; also, the members of the strong and broad DCOSS 2008 Program Committee, as well as the external reviewers who worked with them. I wish to thank the Steering Committee Chair, Jose Rolim, and the DCOSS 2008 General Chairs, Tarek Abdelzaher and Viktor Prasanna, for their trust and their valuable contribution to the organization of the conference, as well as the Proceedings Chair, Zachary Baker, for his tireless efforts in preparing these conference proceedings.

June 2008

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