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Rajgopal Kannan Prem Uppuluri
Manoj Madhava Gore (Eds.)

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Distributed Computing and Internet Technology

Third International Conference, ICDCIT 2006
Bhubaneswar, India, December 2006
Proceedings

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Message from the General Chair

ICDCIT was initiated with the idea of providing a forum for researchers around the world for discussing the challenges in the areas of computing, communication and control. As challenges due to the fusion of computing, communication and control lie in collaborative programming/computing and integration of technologies, the focus ICDCIT 2006 was on the following themes: network centric, program centric and data centric.

A right measure for the conference is the material being presented and also the participation. I was delighted to see a wealth of material represented, which was broadly categorized into the following tracks: (1) Net Centric, (2) Program Centric, and (3) Data Centric. In addition to these tracks, various tutorials were planned in the emerging areas, particularly for students from engineering colleges. This conference is a forum that attempts not only to understand the impact but also reshape it for the Indian context. It was a delight to see the enthusiastic participation of researchers from a large number of countries around the world. A very interesting feature of the conference is that it was held in the academic environment of a typical college in India. This facilitated a large participation of students from Orissa and other parts of India.

It is a pleasure to thank the plenary keynote speakers Vivek Sarkar, IBM T.J. Watson Research Center, Yorktown Heights. In addition, I thank the Track Chairs, invited speakers of various tracks, and authors of contributed papers for joining us in making the conference a success.

I would like to thank Sanjay Madria, PC Chair, for compiling such an excellent program. I would like to express my sincere thanks to all the Program Committee members and reviewers who did an excellent job in arriving at an attractive programme.

It is a pleasure to thank the Kalinga Institute of Industrial Technology (KIIT), Bhubaneswar, who took the responsibility of the organization of ICDCIT 2006. My special thanks go to Achyuta Samanta Chancellor, and Prashanta K. Mishra, Pro-Vice Chancellor, of KIIT (Deemed University), for all their organizational efforts and also to the innumerable dedicated volunteers who were responsible for the organization of the conference. Finally, I thank Springer for accepting to publish the proceedings in their LNCS series.

December 2006

R.K. Shyamasundar
IBM India Research Laboratory, New Delhi

Message from the Program Chair

It gives me great pleasure to welcome you to the Proceedings of the Third International Conference on Distributed Systems and Internet Technology (ICDCIT 2006). Continuing the rich tradition of the previous two ICDCITs, this year's technical program presents a collection of excellent papers representing the three themes: Network Centric, Program Centric and Data Centric. This ICDCIT 2006 technical program stimulated future research in this area and brought leading researchers to enhance the intellectual atmosphere of the conference attendees.

I would like to thank the three theme Chairs, Kajal Claypool, Raj Kannan, and Prem Uppuluri, for managing the review process. This year the International Program Committee in consultation with the theme Chairs and the Program Chair recommended 24 full papers and 10 short papers, thus a total of 34 papers out of 200 were selected for the presentation. I would like to thank members of the PC who were instrumental in putting a strong technical program for ICDCIT 2006. Also, thanks to all the authors who submitted their papers to ICDCIT 2006.

In addition, this year's program included one keynote talk and five invited papers. The keynote speaker was Vivek Sarkar from IBM Research Lab, USA, and the topic of his talk was "The Role of Programming Languages in Future Data-Centric and Net-Centric Applications."

I would like to thank all the authors for coming to this conference to present their work and discuss their ideas with peers. The papers presented simulated further discussion and hopefully excited some students to further participate in the areas of research represented by ICDCIT.

I would like to thank Hrushikesha Mohanty, University of Hyderabad, and R.K. Ghosh from IIT Kanpur for their valuable suggestions and guidance. I would like to thank various other Chairs and members of the Organizing Committee for their tireless work to make this symposium a success. In particular, thanks to Kaushik Sahu, Rashmi and their team for managing the conference secretariat, and promptly handling the Web site and other issues, and finally, Manoj Gore for handling the proceedings.

As the founder of this conference series, KIIT University (Kalinga Institute of Industrial Technology), Bhubaneswar, has been very supportive in hosting ICDCIT 2006. In particular, I would like to thank the Chancellor and the Pro-Chancellor of KIIT University, Achyuta Samanta and P. K. Mishra, respectively, for their uninterrupted support.

I hope you find the papers in this volume intellectually stimulating and enjoyable.

Sanjay Madria
University of Missouri-Rolla, USA

Messages from the Theme Chairs

Net Centric

Net-centric computing is an emerging paradigm encompassing modern distributed and embedded systems. The goal of Net-centric technology is to develop open and robust achitectural solutions for converging computing, communication and content. In this spirit, the focus of this year's Net-Centric Track was on networking and quality of service issues. We received an outstanding set of paper submissions addressing various net-centric problems. I would like to thank all of the authors who submitted papers, our invited speaker and the members of the Technical Program Committee.

The net-centric track received around 102 submissions from around the world, of which we were able to select 18 high-quality papers organized into four sessions. The main focus of this year's selected papers was wireless sensor and ad-hoc networks and quality of service. Each paper was first reviewed for relevance to the track theme and reviewed by at least two referees from the Program Committee.

I would like to thank Arun Somani for contributing an outstanding invited paper on the central track theme (Net-centric technologies). I would also like to thank the Program Committee members for doing an excellent job during the review process. The committe members were drawn internationally from universities and research labs in North America, Europe, Asia and Australia. The quality of the program reflects positively on their expertise and dedication.

December 2006 Rajgopal Kannan

Program Centric

I would like to thank all the Program Committee members and reviewers for providing excellent and critical reviews in a timely manner. This track received over 37 papers ranging from issues in load scheduling to papers on e-commerce. Thanks to all the authors for their continued support of this conference by choosing it as an avenue to publish their original research results.

In keeping with the tradition of the previous ICDCIT conferences, the acceptance rate was 18 in this track. These papers were complemented by a invited paper on "Application Level Checkpointing Techniques for Parallel Programs" by Vipin Chaudhury of State University of New York at Buffalo.

With the growth of the Internet fueled by powerful and inexpensive desktop computers, there is renewed interest in several areas of distributed computing which aim to harness this power. I believe this conference was a rewarding opportunity for all of us working or planning to work in the area of distributed

computing with emphasis on the program-centric portions. Furthermore, it provided all of us with avenues to meet other researchers both from industry and academia.

Finally, I would like to thank KIIT for their continued support of this conference.

December 2006 Prem Uppuluri

Data Centric

This year's distributed data management track included work on Web and distributed databases, data mining, spatio-temporal databases, and information security and privacy, and it attracted researchers from both academia and industry.

We were honored to have Tsae-Feng Yu of Oracle Inc. Nashua, NH, Aparna Verde of Virginia State University, Petersburg, Virginia, and Gillian Dobbie from University of Auckland, New Zealand as our invited speakers. Tsae-Feng has had numerous contributions in the area of materialized views, data partitioning and query rewriting, and brought a rich industry perspective to the conference. Aparna Verde's strengths have been in applying data-mining techniques for discovering artifacts in the area of material science, and more recently in the area of nanotechnology. Gillian Dobbie's expertise is in managing semistructured data models.

This year, we received approximately 55 submissions from all over the world, and we accepted 10 for publication, 8 as full-length papers and 2 as short papers. The quality of submitted works was high, making this a great year for ICDCIT and ensuring its growing status as a reputed conference. Every submitted paper received three reviews, and further scrutiny by the chairs. We are grateful for the hard work of our Technical Program Committee—they did an outstanding job. The participation of stellar researchers on the TPC is a complement to the previous ICDCIT conferences.

December 2006 Kajal Claypool, Oracle Inc.

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