IEEE REAL-TIME SYSTEMS SYMPOSIUM

RTSS 2012 DECEMBER 4-7, SAN JUAN, PUERTO RICO

- Hardware/Software Architecture
- Real-time Operating Systems and Scheduling
- Real-time Programming Languages and Software
- Reliability, Safety, and Fault Tolerance
- Performance Evaluation
- Real-time Sensing and Control
- Robotics and Integrated Manufacturing
- Case Studies

Venue

San Juan
Marriott Resort
1309 Ashford Avenue
San Juan, 00907
Puerto Rico

Clima

(San Juan, December)

Air temperature:
22ºC to 28ºC
(72º to 84ºF)
Humidity: 80%
Rainfall: substantial
Sea temperature:
27ºC (80ºF)

Miscellaneous

Currency: USD
Time zone: AST
(No Daylight Saving)
VISA: same as for US
Emergency: 911
Airport-Hotel transfer:
Taxi ~20 USD

Newsletter 2

November 2012

We are now in the final preparations for RTSS 2012, the 33rd IEEE Real-Time Systems Symposium, which will make of San Juan, in Puerto Rico, from the 4th to the 7th of December, the heart of the real-time systems research and practice.

In this newsletter we give you further reasons why RTSS 2012 is an event not to be missed. We highlight the two invited speeches that will enrich this year edition and bring you further information on San Juan and Puerto Rico.

But this is also the moment to acknowledge a large crew that worked hard to bring RTSS 2012 to you. We are especially grateful for the contributions of the following people: *Tarek Abdelzaher*, Cyber-Physical Systems Track Chair; *Abhik Roychoudhury*, Design and Verification Track Chair; *Guoliang Xing*, Wireless Sensor Networks Track Chair; *Tei-Wei Kuo*, Finance Chair; *Giorgio Buttazzo*, Ex-Officio as Chair of the IEEE Technical Committee on Real-Time Systems; *Shinpei Kato*, Publications Chair; *Thomas Nolte*, WIP Chair; *Enrico Bini*, Workshop Chair; *Ying Lu*, *Paulo Pedreiras* and *Zili Shao*, Publicity Chairs; *Sathish Gopalakrishnan* and *Bader Alahmad*, Web Chairs; *Eduardo Tovar*, Industry Chair; *Karthik Lakshmanan* and *Dionisio de Niz*, Organizers of the RTSS@Work Demo Session; *Benny Akesson* and *Bjorn Andersson*, Organizers of the Workshop on Compositional Theory and Technology for Real-Time Embedded Systems; *Oleg Sokolsky* and *Sagar Chaki*, Organizers of the Workshop on Analytic Virtual Integration of Cyber-Physical Systems; *Marc Boyer, Christian Fraboul* and *Giovanni Stea*, Organizers of the Workshop on Worst-Case Traversal Time; *Marisol García Valls* and *Tommaso Cucinotta*, Organizers of the Workshop on Real-Time and Distributed Computing in Emerging Applications; *Stefan M. Petters* and *Hakan Aydin*, Organizers of the Workshop on Power, Energy and Temperature Aware Real-time Systems; the members of the Conference and Workshop Program Committees; the Session Chairs, the reviewers, the authors that submitted their work, and *Linda Buss* for her unexceeding efforts in handling registrations, local arrangements and keeping us on task.

See you soon, in San Juan!

Luis Almeida
General Chair, RTSS 2012

Chenyang Lu
Program Chair, RTSS 2012

Important dates:

Satellite workshops: 4th of December
Symposium: 5th to 7th of December

More information available on our webpage:

http://www.rtss.org/

Satellite Events
(4th of December)

CRTS 2012
5th Workshop on Compositional Theory and Technology for Real-Time Embedded Systems

AVIPCS 2012
3rd Workshop on Analytic Virtual Integration of Cyber-Physical Systems Workshop

WCTT 2012
2nd International Workshop on Worst-case Traversal Time

REACTION 2012
1st Workshop on Real-Time and Distributed Computing in Emerging Applications

PETARS 2012
1st Workshop on Power, Energy, and Temperature Aware Real-time Systems

Special Sessions

RTSS@Work
(4th December)
2nd Open Demo Session of Real-Time Systems

RTSS2012 WiP
(5th December)
Work-in-Progress session

For details on the respective programs consult our webpage **http://www.rtss.org**

2011 IEEE TC-RTS Outstanding Technical Achievement and Leadership Award

Prof. Wei Zhao, University of Macau

(8h30, 5th December)

Internet of Things — What and How

Internet of Things (IoT) is a networking infrastructure for cyber-physical systems. With IoT, physical objects should be able to be seamlessly integrated into an Internet-like system so that the physical objects can interact each other and to cyber-agents in order to achieve mission-critical objectives. Internet of Things (IoT) should have tremendous application potential and hence has become popular in recent years, attracting great attentions from both academic research and industrial development. In this talk, we will first focus on fundamental issues related to IoT. We address principles that should guide R/D of IoT. We will then present several approaches that may lead to implementation of IoT and analyze their advantages and disadvantages. Finally, we will discuss critical issues that must be addressed in order to fully realize the objectives and potentials of IoT.

Speaker's biography

An internationally renowned scholar, Professor Wei Zhao is the Rector of and Chair Professor of the University of Macau. Before joining the University of Macau, Professor Zhao served as the Dean of the School of Science at Rensselaer Polytechnic Institute in the U.S., Director for the Division of Computer and Network Systems in the U.S. National Science Foundation, and Senior Associate Vice President for Research at Texas A&M University. Professor Zhao completed his undergraduate programme in physics at Shaanxi Normal University, Xi'an, China, in 1977, and he later received his MSc and PhD degrees in Computer and Information Sciences at the University of Massachusetts at Amherst in 1983 and 1986, respectively. An IEEE Fellow, Professor Zhao has made significant contributions in distributed computing, real-time systems, computer networks, and cyberspace security. In 2007, he received the IEEE Transactions on Parallel and Distributed Systems Outstanding Achievement Award. Professor Zhao has published over 300 papers in journals, conferences, and book chapters. In 2011, he was named by the Ministry of Science and Technology as the Chief Scientist of the national 973 Internet of Things Project on cyber-physical networking systems. Professor Zhao is also an outstanding leader in academic service. He has served on editorial boards of technical journals, including the IEEE Transactions on Computers and the IEEE Transactions on Parallel and Distributed Systems. He was the chair for the IEEE Technical Committee of Real-Time Systems. He has chaired more than ten international conferences including the IEEE Real-Time Technology and Applications Symposia, the IEEE Real-Time Systems Symposium, the IEEE International Conference on Distributed Computing Systems and Cyber-Physical Systems Week. Prof. Zhao received of IEEE TC-RTS Outstanding Technical Achievement and Leadership Award in 2011.

Regular Program Sessions

5th of December

9-10 Session 1
Beyond Processors

10:30-12:30 Session 2
Real-Time Scheduling

1:30-3:30 Session 3
Wireless Sensor Networks: Applications

6th of December

10:30-12:30 Session 4
Resource Management

2-3:30 Session 5
Cyber-Physical Systems: Technology

4-5:30 Session 6
Cyber-Physical Systems: Applications

7th of December

8:30-10 Session 7
Systems

10:30-12:30 Session 8
Design and Verification

1:30-3:30 Session 9
Wireless Sensor Networks: Protocols

4-6 Session 10
Real-Time Performance Analysis

For details on the respective programs consult our webpage
http://www.rtss.org

RTSS 2012
Keynote Speech

Prof. Edward A. Lee, University of California at Berkeley

(8h30, 6th December)

Time for High-Confidence Distributed Embedded Systems

All widely used software and networking abstractions lack temporal semantics. The notion of correct execution of a program written in every widely-used programming language, in nearly every processor instruction-set, and the most widely used networking protocols today does not depend on timing. Timing properties emerge from an implementation, rather than being part of the design. But temporal behavior matters in almost all systems, but most particularly in networked embedded systems, where temporal behavior affects not just the value delivered by a system but also its correctness.

This talk will argue that time can and must become part of the semantics of programs and networks. To illustrate that this is both practical and useful, we will describe recent efforts at Berkeley in the design and analysis of timing-centric distributed software systems. In particular, we will focus on the PTIDES project, which provides a timing-centric programming model for distributed real-time systems that leverages recent advances in network time synchronization.

Speaker's Biography

Edward A. Lee is the Robert S. Pepper Distinguished Professor and former chair of the Electrical Engineering and Computer Sciences (EECS) department at U.C. Berkeley. His research interests center on design, modeling, and simulation of embedded, real-time computational systems. He is a director of Chess, the Berkeley Center for Hybrid and Embedded Software Systems, and is the director of the Berkeley Ptolemy project. He is co-author of five books and numerous papers. He has led the development of several influential open-source software packages, notably Ptolemy and its various spinoffs. His bachelors degree (B.S.) is from Yale University (1979), his masters (S.M.) from MIT (1981), and his Ph.D. from U. C. Berkeley (1986). From 1979 to 1982 he was a member of technical staff at Bell Telephone Laboratories in Holmdel, New Jersey, in the Advanced Data Communications Laboratory. He is a co-founder of BDTI, Inc., where he is currently a Senior Technical Advisor, and has consulted for a number of other companies. He is a Fellow of the IEEE, was an NSF Presidential Young Investigator, and won the 1997 Frederick Emmons Terman Award for Engineering Education.

Social Program

Welcome reception
(together with Work-in-Progress posters)
5th December, 6-8pm
Meeting rooms lobby

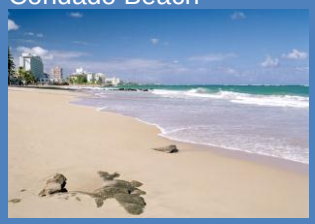
Banquet
6th December, 8-10pm
Grand Ballroom

Closing event
7th December, 6-7pm
Grand Ballroom lobby

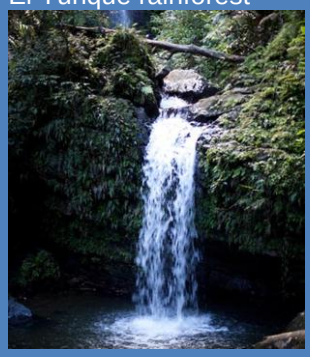
Puerto Rico & San Juan

Suggested links:
www.topuertorico.org
Wikipedia

Condado Beach



El Yunque rainforest



Old San Juan city wall

Where in the world...

(sources: Wikipedia, Marriot and www.topuertorico.org)

Puerto Rico

A tropical island with local exotic hideaways, miles of white sandy beaches, mountains and valleys, and many other natural wonders, populated by warm and friendly people.

San Juan

Capital of Puerto Rico, it is the oldest city on US territory, founded in 1521 by Juan Ponce de León. Today, it mixes historic Old San Juan with high end boutiques and gourmet restaurants in a vibrant ambience.