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2014 Summer Simulation Multi-Conference

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2014 Summer Simulation Multi-Conference (SummerSim'14) Wrap-Up

THANK YOU SUMMERSIM'14 ATTENDEES!

SummerSim 2014 Wrap-Up

By Justyna Zander, MathWorks (USA)

The **Summer Simulation Multi-Conference** (SummerSim) is SCS's premier international conference. The conference focuses on modeling and simulation, tools, theory, methodologies and applications and provides a forum for the latest R&D results in academia and industry. In addition, the tutorials, tracks and workshops are available.

First, I wish to express the warmest gratitude to all participants and organizers of the conference activities making this 2014 Summer Simulation Multi-Conference 2014 a success.

SummerSim'14 explored the potential of the technologies under the motto: *Between Now and the Future with Modeling and Simulation*. It took place in Monterey, California, July 6 – July 10, 2014 and was composed of the following conferences:

- **46th Summer Computer Simulation Conference (SCSC 2014)**
- **International Conference on Bond Graph Modeling (ICBGM 2014)**
- **International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS 2014)**

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SUMMERSIM'15
Summer Simulation Multi-Conference 2015

JULY 26-29, 2015

Palmer House Hilton; Chicago, IL, USA

This year we had **three new SCSC Tracks**. The first new Track was on Cyber-Physical Systems (CPS) that I organized. The second new Track on Modeling and Simulation of Intelligent, Adaptive and Autonomous Systems (MSIAAS) was organized by Dr. Saurabh Mittal. The third Track, organized by Prof. Dr. Jerzy Rozenblit, explored the trends in Medicine and was widely attended. In addition, efforts were undertaken for indexing the ACM published proceedings in Scopus and ISI Web of Science. This year's review process included 3 to 4 reviews for each paper ensuring the quality of the contributions. The effort paid off. The technical presentations were meaningful and provided multiple perspectives, from micro to macro, and system-of-systems views. The acceptance rate of the SCSC conference was 69%.

The technical program was rich and varied. It included 5 academic and industrial keynote speeches and multiple invited papers. Around 150 technical papers were split between 3 parallel oral sessions and poster sessions each day.

Besides, there were workshops and a tutorial program co-located. Numerous opportunities for informal networking and professional socializing were provided.

A full **conference program** is available online. The full proceedings documentation consists of nearly 150 full papers with a total of more than 500 authors.

The winner of **SCSC best paper award** was "*Current Frontiers in Reproducing Human Driver Behavior*" by Marco Lutzenberger and Sahin Albayrak. The Runner-Up (2nd place) was "*Multi-Objective Optimization and Analysis of the Inventory Management Model*" by Tehseen Aslam, Amos H.C. Ng, and Sunith Bandaru. This year both the papers were from the new MSIAAS track.

The winners of the **SPECTS best paper awards** were "*A Partially Centralized Messaging Control Scheme Using Star Topology in Delay and Disruption Tolerant Networks*" by Shoki Oiyama, Hiroki Nishiyama and Nei Kato for the Networking and Telecommunications sub-track; "*Low Latency Packet Processing in Software Routers*" by Torsten Runge, Daniel Raumer, Florian Wohlfart, Bernd E. Wolfinger and Georg Carle for the Computer Systems sub-track; and "*Simulating Billion-Task Parallel Programs*" by Kalyan Perumalla and Alfred Park for the Tools and Methodologies sub-track.

My SummerSim activities included:

1. As General Chair I opened and closed the conference.
2. I introduced the keynote speakers (those whom I invited (Edward Lee of UC Berkeley and Alon Halevy of Google Research)), ran the Q&A sessions, and rewarded the speakers with SCS awards after their talks.
3. I also distributed the best paper awards.
4. Since I organized a CPS track, I also chaired four sessions on Monday (afternoon), Tuesday (morning and afternoon), and Wednesday (afternoon).
5. Finally, I gave a **plenary talk and a live demonstration of the Smart Emergency Response System**

The keynotes were very appealing and resulted in a lot of discussions. They were also video recorded and will soon be available online. The keynote speakers and the topics that they presented are listed below:

- **Simulation, Teaching and Learning of Bond Graphs by Professor Ronald C. Rosenberg, Michigan State University**
- **Technology in Medicine: Past and Future Prospective by Prof. Dr. Manuel Maynar, MD PhD**
- **Constructive Models of Discrete and Continuous Physical Phenomena by Prof. Dr. Edward A. Lee, EECS Department, UC Berkeley**
- **Why Should You Care about Structured Data on the Web? by Dr. Alon**

SummerSim'14 Photos



Halevy, Google

- **Simulations, emulations and connected graphs generation in wireless sensor and ad hoc by Prof. Dr. Ivan Stojmenovic**

All the new tracks were very successful, in particular **the CPS track**. I liked the presentations from the system level perspective. The following drew my attention:

- Scenario Pattern Matching in Large Sensor Recordings with Simulation Models for Cyber-Physical Systems by Christian Berger
- Modular multi-domain Co-simulation for rail vehicle testing with ETCS scenario control by Daniel Ludicke, Florian EBER, Tobias Marchand and Torsten Dellmann
- Co-Simulating Event-B and Continuous Models via FMI by Vitaly Savicks, Michael Butler and John Colley

Lessons learned:

Based on the conversations with the colleagues in the simulation community, notably Dr. Gabriel Wainer and Dr. Saurabh Mittal, I learned to distinguish between two approaches to discrete event simulation. One is more from the software perspective, often using the acronym DES and the other from the systems perspective, known through Discrete Event Systems (DEVS) formalism. Due to their focus on 'discrete' events/signals both DES and DEVS are used interchangeably but it is a bit misleading. The former software-oriented perspective includes terminology like events calendar, messaging and queuing. The latter, is more precisely a Time-Partitioning Based Simulation of Events and/or States, and indeed is based on mathematical Systems Theory through its Levels of Systems specifications. It handles both discrete and continuous signals. What did I learn as the General Chair? It takes a lot of time and effort to organize a conference. The team of at least ten individuals made it happen and I would have been lost without them. Some tracks lost their chairs in the last minute and thus, the General Chair has to cover for such cases. In consequence, one has to stay alert for each and every moment.

Thank you, All!

Justyna Zander on behalf of the *Organizing Committee*:

General Chair **Dr. Justyna Zander**, MathWorks, Inc., USA
General Co-Chair **Dr. Saurabh Mittal**, Dunip Technologies, USA
Honorary Program Chair **Dr. Andreas Tolk**, SimIS Inc., Portsmouth, Virginia, USA
Program Chair **Dr. Zhi Han**, MathWorks, Inc., USA
Proceedings Chair **Dr. Eugene Syriani**, University of Alabama, USA
Publicity Chair Prof. **Dr. Gabriel Wainer**, Carleton University, Canada
Local Logistics Chair **John F. Richardson**, SPAWAR Systems Center PACIFIC, USA
ICBGM 2014 Chair: Jose J. Granda, California State University, USA
SPECTS 2014 Chairs: Dr. Mohammad Obaidat, Monmouth Univ., USA and Dr. Mario Marchese, Univ. of Genoa, Italy
SCSC 2014 Chairs: Dr. Justyna Zander, MathWorks, Inc., USA and Dr. Saurabh Mittal, Dunip Technologies, USA

SummerSim 2014 Best Papers

SCSC:

Winner:

Track: MSIAAS

Paper: Current Frontiers in Reproducing Human Driver Behavior
Authors: *Marco Lutzenberger and Sahin Albayrak*

Runner-Up:

Track: MSIAAS

Paper: Multi-Objective Optimization and Analysis of the Inventory Management Model
Authors: *Tehseen Aslam, Amos H.C. Ng and Sunith Bandaru*

SPECTS:

Winner per sub-track:

Track: Networking and Telecommunication Systems

Paper: A Partially Centralized Messaging Control Scheme Using Star Topology in Delay and Disruption Tolerant Networks

Authors: *Shoki Oiyama, Hiroki Nishiyama and Nei Kato*

Track: Computer Systems

Paper: Low Latency Packet Processing in Software Routers

Authors: *Torsten Runge, Daniel Raumer, Florian Wohlfart, Bernd E. Wolfinger and Georg Carle*

Track: Tools & Methodologies

Paper: Simulating Billion-Task Parallel Programs

Authors: *Kalyan Perumalla and Alfred Park*

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