Autumn Simulation Multi-Conference 2012

The Autumn Simulation Multi-Conference 2012, was held at the Hyatt Regency Mission Bay in San Diego, California from October 28-31, 2012.

The 2012 Autumn Simulation Multiconference was a state-of-the-art conference involving several different academic subjects and areas of professional activity. AutumnSim provided a unique opportunity to learn about emerging M&S applications in many thriving fields including Defense & Military, Homeland Security, Medical Processes, Education & Training, and Energy, Climate & Environment. AutumnSim offered a great forum for worldwide researchers and practitioners from academia, industry, business, and government to share their expertise and research findings in all areas of M&S. This year’s edition included a strong technical program, distinguished keynote speakers, and insightful tutorials.

The inaugural year of this conference proudly coincided with the 60th anniversary of the Society for Modeling and Simulation (SCS). AutumnSim offered many ways to promote simulation products and to enhance corporate images. Scientist, engineers, managers, educators, and business professionals who develop or use simulation tools were invited to participate and present original papers. Below is a brief description of the included Symposium:

EDUCATION AND TRAINING MODELING & SIMULATION (ETMS12)

The Education and Training Modeling and Simulation Symposium welcomed topics on the use of Internet and Web simulation relating to different areas of education and training in the last decade. Because of the transition of World Wide Web from Web 1.0 to Web 2.0 (i.e., the new generation of web) took place within a relatively short period of time. Web 2.0 has become increasingly popular due to the growing popularity of web sites that enable users to build social networks and share content that can be used for simulated training.

News and Development in M&S

Special Issue of SCS JDMS
http://www.scs.org/jdms/specialissues
Various Issues and Deadlines please visit our website at:
http://www.scs.org/publications

Special issue of SCS Simulation
http://www.scs.org/simulation/specialissues
Various Issues and Deadlines, please visit our website at:
http://www.scs.org/publications

Special Issue of Springer CASM on Agent-based Modeling
Submission deadline: Nov. 30, 2012

Special Issue of Springer CASM on Complex Networks Modeling, Simulation, Visualization & Analysis
Submission deadline: Nov. 30, 2012

Special issue on SIMULATION-OPTIMIZATION OF COMPLEX SYSTEMS: METHODS AND APPLICATIONS
Submission deadline: January 31, 2013

(CSC Events continued on Page 3)
“lab rats” for each scale of physiological phenomena. A goal of the MPMS Symposium was to demonstrate the successful use of modeling and simulation to emulate and facilitate underlying molecular, cellular, operational and patient-level processes, with a longer term goal of standardizing medical modeling and simulation approaches for repeatable, verifiable and accredited phenomenological description, etc.

DEFENSE AND MILITARY MODELING & SIMULATION (DMMS12)
The Defense and Military Modeling and Simulation Symposium welcomed submissions of state of the art technical papers, experience papers, and panel presentations from experts in government, industry and academia. In addition to providing a venue for publication and presentation of peer-reviewed papers, the symposium provided attendees with the opportunity to network, exchange ideas, discuss and disseminate the most recent advances in military modeling and simulation with practitioners engaged in military modeling and simulation from across North America and around the world.

HOMELAND SECURITY MODELING & SIMULATION (HLSMS12)
The Homeland Security Modeling and Simulation Symposium was a gathering devoted to the full breadth of modeling and simulation in support of security efforts to protect the United States from a plethora of threats and enhance America’s resiliency. The themes for this year’s conference were Game Theory and Cybersecurity. In addition to providing a venue for publication and presentation of peer-reviewed papers, the symposium was a place for industry and end users to network and exchange of information concerning Homeland Security.

ENERGY, CLIMATE & ENVIRONMENT MODELING & SIMULATION (ECEMS12)
The Energy, Climate & Environment Modeling and Simulation Symposium dealt with topics regarding the wave of technological innovation taking place today in energy systems and were fundamentally about automation, and the desire to build sophisticated automation systems with modeling and simulation of electric power systems. The aim of this symposium was to bring together practitioners and researchers in the field of modeling and simulation and energy systems to share ideas, foster collaborations, and accelerate the advancement of M&S for future energy systems. The conference also gave practitioners and researchers in the field of M&S an opportunity to become familiar with simulation technologies and outstanding problems in the field of energy systems. For practitioners and researchers in the field of energy systems, this conference provided an opportunity to learn about recent advances in modeling and simulation technologies and their applications within a variety of disciplines.

MEDICAL PROCESSES MODELING & SIMULATION (MPMS12)
Medical Modeling and Simulation is a contemporary interest due to the labor-intensive nature of the current practice of medical processes in organizations that span from University research to patient care. Systems based healthcare requires cooperation on research and integration of resulting discoveries into clinical practices. Because of regulatory restrictions, medical science procedures are clearly defined processes and are therefore ripe for the application of modeling and simulation to develop cyber

ASIASIM & ICSC 2012
The Asia Simulation Conference & the International Conference on System Simulation and Scientific Computing 2012 (AsiaSim & ICSC 2012, http://www.asiasim2012.org) was held in Shanghai, China from October 27-30, 2012. AsiaSim & ICSC 2012 is constituted by AsiaSim and ICSC. Thereinto, AsiaSim is an annual international conference organized by three Asian Simulation Societies: Chinese Association for System Simulation (CASS), Japanese Society for Simulation Technology (JSST) and Korean Society for Simulation (KSS) since 1999. Now it has become a series conference of the Federation of Asia Simulation Societies (ASIASIM) which was established in 2011. ICSC is a prolongation of the Beijing International Conference on System Simulation and Scientific Computing (BICSC) sponsored by the Chinese Association for System Simulation (CASS) since 1989. It is an international conference once per three years. AsiaSim & ICSC 2012 was sponsored by ASIASIM, the Federation of Asia Simulation Societies, which was founded in 2011. Currently, the member societies of ASIASIM include Chinese Association for System Simulation (CASS), Japanese Society for Simulation Technology (JSST), Korean Society for Simulation (KSS) and Society of Simulation and Gaming of Singapore (SSAG). ASIASIM is set up to build close and cooperative relationship among societies of simulation science and technology in Asian countries or regions. AsiaSim & ICSC 2012 was organized by the Chinese Association for System Simulation (CASS) and Shanghai University. Nearly 300 excellent papers were selected at the proceedings of this conference, from over 900 submissions by scholars from 8 different
countries in and out of Asia. More than 200 researchers attended this year’s conference and presented their papers. 3 best papers and 7 best paper candidates were selected through rigorous review processes. During the conference, 7 keynote speeches were delivered from the distinguished scholars from the international simulation community, emphasizing different but really critical aspects in cutting-edge simulation technology. Through the various presentations made by professors, scholar and students, the conference obtained a much clearer overview about international development status of simulation technology, a more insightful understanding on specific details of important issues, and a much stronger urge to put more energy and passion in answering these interesting questions.

-This news item is contributed by Bohu Li.
TITAN NAMED WORLD’S FASTEST SUPERCOMPUTER

A machine known as Titan has claimed the title of the world’s fastest computer. Installed at the US government’s Oak Ridge National Laboratory in Tennessee, the computer offers a performance of 17.59 petaflops - or 17.59 thousand trillion calculations per second. Read the article at: http://www.computeach.co.uk/IT-news/IT-Computer-Technology-News/IT-industry-news-Titan-named-world-s-fastest-supercomputer/801487594

-This news item is contributed by Alfredo Tirado-Ramos.

ORIGAMI COMPUTER THEORY UNFOLDING

For as long as paper has been in existence - the Chinese are usually credited with its invention in the second century - one suspects people have been folding it into shapes for their amusement.

But it was not until the year 1797, with the publication of the Japanese book The Secret of One Thousand Cranes Origami that formal instructions on creating a figure first appeared in print.

In the two centuries since, the realms of origami have reached new heights, with deft-fingered artists being able to form almost any object, shape or figure that one can imagine.

Read the article at: http://www.thenational.ae/arts-culture/art/origami-computer-theory-unfolding

-This news item is contributed by Alfredo Tirado-Ramos.

A HANDS-ON INTRODUCTION TO AGENT-BASED MODELLING FOR SOCIAL SCIENTISTS: EXPLORING COMPLEX AND DYNAMIC SOCIAL PROCESSES

Thursday 28 February - Friday 1 March 2013.
Basement Computer Lab, Humanities Bridgeford Street, University of Manchester
The Institute for Social Change, the Cathie Marsh Centre for Census and Survey Research and the Centre for Policy Modeling will be running a 2-day introduction to agent-based simulation. This workshop is funded by a grant from the methods@manchester initiative. The course is free to attend and will be suitable for people without any experience of computer programming, but is particularly aimed at post-graduate social researchers, e.g. PhD students, post-docs, lecturers.
This workshop will introduce participants to the modeling of dynamic social processes, such as group membership, influence, imitation, collaboration and innovation, through a series of agent-based simulations.
See the methods@manchester methods pages for an introduction to Social Simulation and Agent-Based Modeling (www.methods.manchester.ac.uk).

Participants will gain understanding of the simulation of social processes by exploring working simulation models and by adapting these models to describe different types of process. It will give participants a first-hand experience of complexity science including the ideas of emergence, self-organization, chaos, lock-in and dynamic systems. We will also consider the limitations and difficulties of such techniques, and how they complement more traditional approaches in the social sciences.
This will be a largely hands-on course, exposing participants to a series of simulation models in the NetLogo simulation language. It will include: brief introductions, simplified example models, guided suggestions for interacting with them and assistants to help when you get stuck. There will be some summary sessions to bring out the lessons learnt and additional materials to guide participants onto the next steps of working with simulations.

Booking form at:
http://www.methods.manchester.ac.uk/events/2013-02-28/

-This news item is contributed by Abhijit Sengupta.

ADDRESSING THE NEED FOR DATA AND CODE SHARING IN COMPUTATIONAL SCIENCE


-This news item is contributed by Abhijit Sengupta.
Title: Simulation Foundations, Methods and Applications.
Editor: Louis G. Birta
Description: A new book series exploring the full range of contemporary topics in Modeling and Simulation was recently launched by Springer. The series is called Simulation Foundations, Methods and Applications and details can be found at: http://www.springer.com/series/10128

The modeling and simulation community extends over a range of diverse disciplines and this landscape continues to expand at an impressive rate. Modeling and simulation is fundamentally a computational tool which has an established record of significantly enhancing the understanding of dynamic system behavior on one hand, and the system design process on the other. Its relevance is unconstrained by discipline boundaries. Furthermore, the ever-increasing availability of computational power makes feasible applications that were previously beyond consideration.

Simulation Foundations, Methods and Applications hosts high-quality contributions that address the various facets of the modeling and simulation enterprise. These range from fundamental concepts that are strengthening the foundation of the discipline to the exploration of advances and emerging developments in the expanding landscape of application areas. The underlying intent is to facilitate and promote the sharing of creative ideas across discipline boundaries. The readership will include senior undergraduate and graduate students, modeling and simulation professionals and research workers.

Inasmuch as a model development phase is a prerequisite for any simulation study, there is an expectation that modeling issues will be appropriately addressed in each presentation. Incorporation of case studies and simulation results will be strongly encouraged.

Titles can span a variety of product types, including but not exclusively, textbooks, expository monographs, contributed volumes, research monographs, professional texts, guidebooks and other references.

These books will appeal, varyingly, to senior undergraduate and graduate students, and researchers in any of a host of disciplines where modeling and simulation has become (or is becoming) a basic problem-solving tool. Some titles will also directly appeal to modeling and simulation professionals and practitioners.

Awareness of this series is especially appropriate for the SCS membership community and all readers of the SCS M&S Newsletter since titles/topics in the series will be focused on providing relevance and value to members of these communities. Proposed contributions to this series are most welcome (in fact, enthusiastically encouraged!). Please direct enquiries to the series editor, Lou Birta (LBirta@site.uottawa.ca).

-This news item is contributed by Louis G. Birta.

Title: Ontology, Epistemology, and Teleology for Modeling and Simulation: Philosophical Foundations for Intelligent M&S Applications.
Editor: Andreas Tolk
Description: In this book, internationally recognized experts in philosophy of science, computer science, and modeling and simulation are contributing to the discussion on how ontology, epistemology, and teleology will contribute to enable the next generation of intelligent modeling and simulation applications.

It is well understood that a simulation can provide the technical means to display the behavior of a system over time, including following observed trends to predict future possible states, but how reliable and trustworthy are such predictions? The questions about what we can know (ontology), how we gain new knowledge (epistemology), and what we do with this knowledge (teleology) are therefore illuminated from these very different perspectives, as each experts uses a different facet to look at these challenges. The result of bringing these perspectives into one book is a challenging compendium that gives room for a spectrum of challenges: from general philosophy questions, such as can we use modeling and simulation and other computational means at all to discover new knowledge, down to computational methods to improve semantic interoperability between systems or methods addressing how to apply the recent insights of service oriented approaches to support distributed artificial intelligence.

As such, this book has been compiled as an entry point to new domains for students, scholars, and practitioners and to raise the curiosity in them to learn more to fully address the topics of ontology, epistemology, and teleology from philosophical, computational, and conceptual viewpoints.

-This news item is contributed by Andreas Tolk.
WHY ASK, “WHY”?

In a recent paper, author C. Elsenbroich raises, and answers, the following question: What kind of knowledge can we obtain from agent-based models? Put otherwise, what kinds of explanations can agent-based models provide? An explanation is a response, possibly incorrect, to a “why” question. The paper identifies and describes several flavors of explanation, among them covering-law explanation and mechanism-based explanation. The author suggests that covering-law explanation (involving deduction from presumably universal laws) is not an appropriate goal for social science. Why? It is suggested that the reality of the social world presupposes a different type of object (namely, social) and (sometimes) different ways of knowing that type of object and the relationships between tokens of that type. According to the author, mechanism-based explanations “give us an account of how a system works, a set of patterns in particular contexts … that help us generate predictions which can be tested … and, if the predictions are false, … to figure out which mechanism was at fault”.

For some readers, the paper may have too many philosophical distinctions. Others may find the ammunition they need to puncture the claim of skeptics that social simulation modeling is unscientific because it does not (and perhaps cannot) provide covering-law explanations as exemplified in physics. For details, and examples, see the Journal of Artificial Societies and Social Simulation 15 (3) 1, available at http://jasss.soc.surrey.ac.uk/15/3/1.html.

-This news item is contributed by Roy Wilson.