

CTS 2011 PREFACE

Welcome to the 2011 International Conference on Collaboration Technologies and Systems (CTS 2011). During the conference, attendees will see and interact with a broad spectrum of methodologies and technologies that relate to cooperation, coordination, communication, and collaboration at both the client and backend (cloud) levels. This year's conference presents a wide array of papers, posters, workshops, panels, demonstrations, exhibits, presentations, and tutorials addressing a broad range of topics including sensor, people, robot and social networks, e-learning, e-business, e-health, emergency response, knowledge management, decision making using clouds, global grids, P2P, multi-agent systems, trust and security, mobile clients, Web 2.0, virtual environments, user interfaces and related human and socio-technical collaboration issues.

Today's computer and information technologies see dramatic progress in both lightweight clients and megascale backend systems (clouds) supporting them. This supports seamless and borderless information delivery and services for anyone, anywhere, and anytime. The international free flow of information is having huge socio-political impacts on countries where strict censorship and limits on information and news exchange had been traditionally and culturally accepted. World-wide, people expect unlimited access to information within and across cultures. Social networking continues to expand, even at the enterprise level, and businesses are struggling to devise policies on the appropriate use of applications such as Facebook, Twitter, blogs, and texting. The desire for mobile and pervasive connectivity is pushing expansion of an ever growing wired and wireless high speed backbone that globally combines computing, sensing, and communication technologies. Annually, new classes of mobile devices are added to the traditional desktop, notebook computers, tablet PCs, and netbooks. Most recently multi-modal touch screen devices, pioneered by Apple's iPhone™, iTouch™, and iPad™ with growing importance of Android-based systems, have significantly improved the ease of use of personal collaboration instruments. The new mobile devices provide immediate access to people, email, entertainment and knowledge, and have created a marketplace for hundreds of thousands of new applications. These applications are enabled by backend clouds but their utility depends on their value to people.

Underlying infrastructure such as cloud computing, service oriented architectures, and smart networks and grids offer the vision of resources (networks, computational servers, storage, etc.) as a service with greater ease to collaborate and while also lowering cost. At the same time, there are new challenges for privacy and security as we attempt to understand how to handle trust in complex systems and how to measure trustworthiness in human to human, human to machine, and machine to machine collaboration.

CTS is the premier international research conference in the major areas related to collaboration, communication and their underlying technologies. It offers an exceptional opportunity to interact with world class researchers in collaboration and related arenas and discuss the results of the best research in the domain. The conference gives us insight into what collaboration is today and what 21st century collaboration will be based on technologies now in research and development. We hope you enjoy and learn from the tremendous exchange of ideas and concepts that will be presented in this year's conference sessions.

Geoffrey Fox and Waleed W. Smari
CTS 2011 Conference Co-Chairs
Bloomington, Indiana and Dayton, Ohio, USA
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CTS 2011 PROGRAM MESSAGE

On behalf of the Organizing and International Technical Program Committees, we are delighted to present these proceedings of the 2011 International Conference on Collaboration Technologies and Systems (CTS 2011) and its program. This year is the 12th anniversary of the CTS conferences. We are pleased to have this milestone and look forward to continuous contributions to the community and bringing the state-of-the-art in research and development in this domain.

The meeting this year is held May 23-27, in Philadelphia, Pennsylvania, USA. The meeting provides a dynamic forum to address, explore, and exchange information, knowledge, and experiences in the state-of-the-art collaborative enterprises, their modeling and simulation, design and use, and impact. The goal of CTS meetings is to bring together researchers, scientists, engineers, practitioners, educators, and students from many nations and backgrounds to share and exchange their insights, breakthroughs, and research results about various aspects of collaboration systems and technologies; to discuss challenges encountered in government, industry, and academe; and to seek new and innovative solutions. Additionally, we hope that the Conference will provide opportunities for many open technical interchanges in individual and group settings on key technology issues. It is our hope that the Conference will provide opportunities for future collaborations among the participants.

This year, and despite the challenging times, the CTS Conference is run with parallel sessions over a period of four days, including one full day of parallel tutorials. For the second time, we have full day parallel sessions on all days of the conference to accommodate the number of presentations we have this year. Also for the second time, we have three doctoral dissertation presentations as part of the DD Colloquium. In addition, the Conference concludes with a one-day excursion in Philadelphia. As in the previous years' successful meetings, the Conference continues to enjoy excellent growth and a diverse program. The Proceedings contains papers on many timely and emerging topics. Once again, we received a good number of submissions and the quality of the overall manuscripts pool was excellent. There were a total of 167 paper submissions from 31 countries. The top four countries with most submissions were: the US with about 48%, followed by France (12%), Norway (10%), and Italy (8%). In the main track, each manuscript underwent a minimum of four rigorous reviews plus two independent evaluations. It was a challenge to select papers for inclusion in the proceedings. The overall acceptance rate this year was about 41.3% (17 papers were accepted in the main track, 52 papers in the symposia, workshops and special sessions). The Conference had thirteen symposia, workshops and special sessions. Each of the symposia, workshops and special sessions handled their papers separately but maintained similar standards for paper evaluation and acceptance as much as possible. These proceedings include a total of 101 contributions (full papers, poster papers, extended abstracts, etc.), both invited and accepted from the submissions. The program's technical papers represent works from academia, research laboratories, government, and industry.

The four-day final program is strong and diverse. It consists of an opening remarks session, four keynote speeches, a plenary session, six tutorial sessions, five demo sessions, twenty-four technical sessions, a posters session, three panel sessions, a DDC session, a conference reception, a luncheon and a banquet dinner, three meet & greet sessions, nine short breaks, exhibits, and three other social events, including a full-day excursion in Philadelphia.

We would like to thank first all the participants and authors who submitted works and papers to the CTS Conference this year. The program is built from their hard work and contributions. We also wish to thank the many people who helped make this Conference happen successfully: our Keynote Speakers John Carroll, Steve Benford, Elizabeth Churchill, and Leah Buechley; our Plenary Speaker Nabil Adam; our Invited Speakers Prasun Dewan, Anna Divoli, Mark Klein, Robert Kohout, Sanjay Kumar Madria, Gerry Stahl, and J. Gregory Trafton; our symposia, workshops and special session Organizers Yuri Demchenko, Ravi Sandhu, Giorgio De Michelis, Nahum Gershon, Hervé Guyennet, Violeta Felea, Julien Bernard, Joan Reynaud, Marc Pasquet, Haibin Zhu, Wei Chen, Edmund Durfee, Robert Neches, Nada Matta, Ines Saad, Davy Monticolo, Carla Simone, Goce Trajcevski, Junaid Zubairi, Athar Mahboob, Syed Misbahuddin, Eli Blevis, Samuel Mann, Elena Simperl, Katharina

Siorpaes, Frank Dengler, Tania Tudorache, Selma Šabanović, Adriana Tapus, Eric Meisner, Demetrios G. Sampson, Yacine Atif, Imran Zualkernan, Sanjay Kumar Madria, and Mark Linderman; our Tutorials presenters Luis Bermudez, Guillaume Ducellier, Yannick Charlot, Krishnaprasad Thirunarayan, Pramod Anatharam, Steinar Kristoffersen, Geoffrey C. Fox, and Prasun Dewan; our Demo Sessions presenters David Grunberg, Alyssa Batula, Youngmoo Kim, Richard M. Keller, Ahmed El-Hassany, Guilherme Fernandes, Ezra Kissel, Matthew Jaffee, Martin Swany, Lorenzo Boaro, Emanuele Glorio, Francesco Pagliarecci, Luca Spalazzi, Xiaoqing (Frank) Liu, Ravi Santosh Arvapally; the Doctoral Dissertation Colloquium contributors Thomas Heverin, Sandra Toze, and Pamela Wisniewski; and last but not least our Panel Sessions moderators and panelists Giorgio De Michelis, Steve Benford, John Carroll, Elizabeth Churchill, Prasun Dewan, Marco Susani, Susan Gasson, Sean Goggins, Michael Khoo, Nada Matta, Lisl Zach, Selma Šabanović, Jennifer Burke, Kris Hauser, and Janet Vertesi.

We also wish to recognize the contributions of our Advisory Committee members who provided us with excellent suggestions and advice whenever needed. Our superb collection of papers and presentations was possible through the diligent work of the International Technical Program Committees. The ITPC co-chairs, members and reviewers did an exceptional job and we are grateful for their help in reviewing and evaluating the paper submissions. We also recognize the contribution and support of the CTS 2011 exhibitors and sponsors who made many of the Conference's activities possible. Last but not least, we wish to thank all members of the Organizing Committee without whom this conference would not have been possible.

On behalf of the organizers, the ITPC and all those who made CTS 2011 a reality, we hope you find this volume of value, thought provoking and interesting, as have been the case in the past years.

Thank you and we look forward to seeing you at our CTS 2012 meeting.

Waleed W. Smari and Geoffrey C. Fox
CTS 2011 Organizing Committee Co-Chairs
Dayton, Ohio, and Bloomington, Indiana, USA
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