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Editorial for CollaborateCom 2011 Special Issue

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Editorial:

Collaboration is an essential cornerstone of modern computing. Enabled by cloud computing, new wireless networks, ubiquitous mobile devices – to name just a few – the new collaborative ecosystem promises a potential that far exceeds our current capabilities. And as the world heads towards unlimited connectivity and global mobile computing, future collaboration solutions that fully realize this potential will require advances in networking, technology and systems, user interfaces and interaction paradigms, and interoperation with application-specific components and tools.

As a nexus for collaborative computing, the Seventh International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom 2011) serves as a premier international forum for discussion among academic and industrial researchers, practitioners, and students interested in collaborative networking, technology and systems, and applications. In total, we received 62 submissions to CollaborateCom 2011. After a rigorous review and follow-up discussions, the Program Committee selected 19 papers for acceptance (a rate of 30 %). Following the completion of the conference, the Program Committee selected three of the best papers from the conference that best exemplify the themes of CollaborateCom and mobile computing for special invited submission to this issue. These three papers underwent a series of new reviews and revisions before appearing as you will find them here.

In the first paper titled "Data Replication in Cooperative Mobile Ad-Hoc Networks: A game theoretic replication algorithm using volunteers' dilemma," Hirsch and Madria propose a new replication scheme to strategically balance the constrained resources inherent in a mobile computing environment through a cooperative game theoretic approach. Nodes within the network collaborate via cooperative replica caching decisions to achieve overall improved query response times while reducing the query error rate and energy utilization.

The second paper titled "Combining Mobile XMPP Entities and Cloud Services for Collaborative Post-Disaster Management in Hybrid Network Environments," by Klauck and Kirsche presents a new system design that integrates portable devices and autonomous sensors through XMPP with the flexibility of cloud services to support post-disaster management. Through implementation and evaluation of two prototypes, they derive new insights into the practical application of XMPP and potential enhancements in hybrid (ad hoc and infrastructure) network scenarios.

In the third paper titled "ChameleonSoft: Software Behavior Encryption For Moving Target Defense," Azab and Elotweissy propose a biologically-inspired defense system that employs multidimensional software diversity to overcome the vulnerability of the persistent software monoculture. The system – ChameleonSoft – is built over a cell-oriented architecture, applying a multidimensional spatio-temporal diversity and hot shuffling of variants, hence effecting software execution behavior encryption, as well as adjusting its system policies at runtime to meet the continual change in the operational environment.

As you read this issue, we believe you'll find that the selected papers make significant contributions to

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researchers, practitioners, and students working in the areas of collaborative mobile systems and applications. This issue would not be possible without the hard work of all of our authors, as well as our team of referees who carefully reviewed each paper. And a special thanks goes to the editorial board of MONET and Prof. Imrich Chlamtac, the Editor in Chief of this journal, for their support.

James Caverlee is an Assistant Professor in the department of Computer Science and Engineering at Texas A&M University. At Texas A&M, Dr. Caverlee directs the infolab, a research lab founded in 2007 to study problems at the intersection of web-scale information management, distributed data-intensive systems, and social computing. Dr. Caverlee received his Ph.D. from Georgia Tech in 2007, M.S. degrees in Computer Science (2001) and in Engineering-Economic Systems & Operations Research (2000) from Stanford University, and a B.A. in Economics from Duke University (1996, magna cum laude). Dr. Caverlee is a recipient of the 2010 Defense Advanced Research Projects Agency (DARPA) Young Faculty Award, the 2012 Air Force Office of Scientific Research (AFOSR) Young Investigator Award, and a 2012 NSF CAREER Award.

Calton Pu is a Professor and John P. Imlay, Jr. Chair in Software at the College of Computing, Georgia Institute of Technology. Calton was born in Taiwan and grew up in Brazil. He received his PhD from University of Washington in 1986 and served on the faculty of Columbia University and Oregon Graduate Institute. His contributions to systems research include program specialization and software feedback in the Synthesis, Synthetix, and Infosphere projects. His contributions to database research include extended transaction models and their implementation such as Epsilon Serializability and Reflective Transaction Framework. His recent research has focused on event processing (Continual Queries over the Internet), automated system management (Elba project) and services computing (dependable systems software). His collaborations include applications of these techniques in scientific research on macromolecular structure data, weather data, environmental data, and health care.

Dimitrios Georgakopoulos is a Research Director at the CSIRO ICT Centre where he heads the Information Engineering Laboratory that is based in Canberra and Sydney. The laboratory has 70 researchers and more than 40 visiting scientists, students, and interns specializing in the areas of Service/Cloud Computing, Human Computer Interaction, Machine Learning, and Semantic Data Management. Dimitrios is also an Adjunct Professor at the Australian National University. Before coming to CSIRO in October 2008, Dimitrios held research and management positions in several industrial laboratories in the US. From 2000 to 2008, he was a Senior Scientist with Telcordia, where he helped found Telcordia's Research Centers in Austin, Texas, and Poznan, Poland. From 1997 to 2000, Dimitrios was a Technical Manager in the Information Technology organization of Microelectronics and Computer Corporation (MCC), and the Chief Architect of MCC's Collaboration Management Infrastructure (CMI) consortial project. From 1990-1997, Dimitrios was a Principal Scientist at GTE (currently Verizon) Laboratories Inc. Dimitrios has received a GTE (Verizon) Excellence Award, two IEEE Computer Society Outstanding Paper Awards, and was nominated for the Computerworld Smithsonian Award in Science. He has published more than one hundred journal and conference papers. Dimitrios is the Vice-Chair of the 12th International Semantic Web Conference (ISWC 2013), Sydney, Australia, 2013. In 2011, Dimitrios was the General chair of the 12th International Conference on Web Information System Engineering (WISE), Sydney, Australia, and the 7th International Conference on Collaborative Computing (CollaborateCom), Orlando, Florida, October 2011. In 2007, he was the Program Chair of the 8th WISE in Nancy France, and the 3rd CollaborateCom in New York, USA. In 2005, he was the General chair of the 6th WISE in New York. In 2002, and he served as the General Chair of the 18th International Conference on Data Engineering (ICDE) in San Jose, California. In 2001, he was the Program Chair of the 17th ICDE in Heidelberg, Germany. Before that he was the Program Chair of 1st International Conference on Work Activity Coordination (WACC) in San Francisco, California, 1999, and has served as Program Chair in a dozen smaller conferences and workshops.

James Joshi is an associate professor in the School of Information Sciences at the University of Pittsburgh. He is a founder and the director of the Laboratory of Education and Research on Security Assured Information Systems (LERSAIS). He received his MS in Computer Science and PhD in Computer Engineering degrees from Purdue University in 1998 and 2003, respectively. His research interests include Access Control Models, Security and Privacy of Distributed Multimedia Systems, Trust Management and Information Survivability. He is a recipient of the NSF-CAREER award in 2006. He directors the NSF Scholarship for Service program at the University of Pittsburgh.