Lecture Notes in Computer Science 5340

Commenced Publication in 1973
Founding and Former Series Editors:
Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

Sandeep Kulkarni   André Schiper (Eds.)

Stabilization, Safety, and Security of Distributed Systems

10th International Symposium, SSS 2008
Detroit, MI, USA, November 21-23, 2008
Proceedings

Springer

Volume Editors

Sandeep Kulkarni
Department of Computer Science and Engineering
Michigan State University
East Lansing, MI, USA
E-mail: sandeep@cse.msu.edu

André Schiper
École Polytechnique Fédérale de Lausanne (EPFL)
Lausanne, Switzerland
E-mail: andre.schiper@epfl.ch

Preface

This volume contains the proceedings of the 10th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS), held November 21–23, 2008 in Detroit, Michigan USA.

SSS started as the Workshop on Self-Stabilizing Systems (WSS), which was first held at Austin in 1989. From the second WSS in Las Vegas in 1995, the forum was held biennially, at Santa Barbara(1997), Austin (1999), Lisbon (2001), San Francisco (2003) and Barcelona (2005). The title of the forum changed to the Symposium on Self-Stabilizing Systems (SSS) in 2003. Since 2005, SSS was run annually, and in 2006 (Dallas) the scope of the conference was extended to cover all safety and security-related aspects of self-* systems. This extension followed the demand for self-stabilization in various areas of distributed computing including peer-to-peer networks, wireless sensor networks, mobile ad-hoc networks, robotic networks. To reflect this change, the name of the symposium changed to the International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS).

This year we received 43 submissions from 13 countries. Most submissions were from the USA and France. Each submission was carefully reviewed by three to six Program Committee members with the help of external reviewers. For the first time a rebuttal phase allowed the authors to react to the reviews before the discussion of the papers within the Program Committee. Out of the 43 submissions, 17 excellent papers were selected for presentation at the symposium, which corresponds to an acceptance rate of 40%. It can be noted that the highest acceptance rate was for papers with keywords *sensor networks* (86%), *MANETs* (67%), and *security of sensor and mobile networks protocols* (67%). Interestingly, the best paper award (a recent tradition is SSS) was given to a paper without any of these keywords, namely, to Peter Robinson and Ulrich Schmid for the paper "The Asynchronous Bounded-Cycle Model." In addition to the regular papers, the symposium included three invited keynotes that covered the large spectrum of topics of the symposium: "Primitives for Physical Trust" by Anish Arora, "Distributed Algorithms and VLSI" by Ulrich Schmid, and "Trustworthy Services and the Biological Analogy" by Mike Reiter.

We thank all the members of the Program Committee and their external reviewers for their thorough work and for the time they spent selecting the best papers. Paper submission, selection, and generation in the proceedings was greatly eased by the use of the EasyChair conference system (`http://www.easychair.org`). We wish to thank the EasyChair creators and maintainers for their commitment to the scientific community. We also thank the members of the Steering Committee for their invaluable advice. We gratefully acknowledge the Organizing

Committee members for their generous contribution to the success of the symposium. Finally, we wish all the participants a fruitful and enjoyable symposium.

November 2008   Sandeep Kulkarni
                                                     André Schiper

Organization

Program Chairs

Sandeep Kulkarni
André Schiper

Program Committee

Anish Arora
Mahesh Arumugam
Levente Buttyan
Wei Chen
Alain Cournier
Ajoy Datta
Xavier Défago
Murat Demirbas
Shlomi Dolev
Felix Freiling
Roy Friedman
Sukumar Ghosh
Mohamed Gouda
Yong Guan
Constance Heitmeyer
Ted Herman
Lisa Higham

Jaap-Henk Hoepman
Martin Hutle
Alex Liu
Jean-Philippe Martin
Achour Mostéfaoui
Mikhail Nesterenko
Guevara Noubir
Rui Oliveira
Fernando Pedone
Ravi Prakash
Ulrich Schmid
Alex Shvartsman
Neeraj Suri
Sébastien Tixeuil
Philippas Tsigas
Tatsuhiro Tsuchyia

Poster Chairs

Doina Bein
Ali Ebnenasir

Local Organization

Hongwei Zhang

External Reviewers

Najla Alam

Murat Ali Bayir

Doina Bein

Martin Biely

Christian Boulinier

Lasaro Camargos

Łukasz Chmielewski

Thomas Clouser

Sylvie Delaët

Dan Dobre

Matthias Függer

Flavio Garcia

Hirotsugu Kakugawa

Jing Li

Zvi Lotker

Xuming Lu

Matthias Majuntke

Amirhossein Malekpour

Toshimitsu Masuzawa

Calvin Newport

Lucia Draque Penso

Maria Potop-Butucaru Gradinariu

Peter Robinson

Lifeng Sang

Nicolas Schiper

Jörg Schwenk

Marco Serafini

Onur Soysal

Mukundan Sridharan

Vincent Villain

Josef Widder

Reuven Yagel

Wenjie Zeng

Table of Contents

Stabilizing Algorithms II

Wireless Networks II

Security and System Models

Tutorial Abstract