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Stabilization, Safety, and Security of Distributed Systems

13th International Symposium, SSS 2011
Grenoble, France, October 10-12, 2011
Proceedings

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Preface

The papers in this volume were presented at the 13th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS), held on October 10–12, 2011 in Grenoble, France.

SSS is an international forum for researchers and practitioners in the design and development of distributed systems with self-* attributes, such as self-stabilization, self-configuration, self-organization, self-management, self-healing, self-optimization, self-adaptiveness, self-repair, self-protection, etc. Many researchers are now focusing on bringing self-* properties into distributed systems. They mainly aim to tolerate different kinds of undesirable phenomena without human intervention. Moreover, distributed systems are now at a crucial point in their evolution, marked by the increasing importance of flexibility, as is the case in peer-to-peer networks, large-scale wireless sensor networks, mobile ad-hoc networks, cloud computing, robotic networks, etc. Also, new applications with self-* requirements are currently coming up in different fields such as grid and web services, banking and e-commerce, e-health and robotics, aerospace and avionics, automotive, industrial process control, etc.

SSS started as the Workshop on Self-Stabilizing Systems (WSS), the first two of which were held in Austin in 1989 and in Las Vegas in 1995. Starting in 1995, the workshop began to be held biennially; it was held in Santa Barbara (1997), Austin (1999), and Lisbon (2001). As interest grew and the community expanded, in 2003, the title of the forum was changed to the Symposium on Self-Stabilizing Systems (SSS). SSS was organized in San Francisco in 2003 and in Barcelona in 2005. As SSS broadened its scope and attracted researchers from other communities, a couple of changes were made in 2006. It became an annual event, and the name of the conference was changed to the International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS). The last five SSS conferences were held in Dallas (2006), Paris (2007), Detroit (2008), Lyon (2009), and New York (2010).

This year the Program Committee was organized into several tracks reflecting most topics related to self-* systems. The tracks were: (i) Ad-Hoc, Sensor, and Dynamic Networks, (ii) Fault-Tolerance and Dependable Systems, (iii) Overlay and Peer-to-Peer Networks, (iv) Safety and Verification, (v) Security, (vi) Self-Organizing and Autonomic Systems, and (vii) Self-Stabilization.

We received 79 submissions from 19 countries. Each submission was reviewed by at least three Program Committee members with the help of external reviewers. Out of the 79 submitted papers, 29 papers were selected for presentation. The symposium also included 10 brief announcements. Selected papers from the symposium will be published in a special issue of *Theoretical Computer Science* (TCS). This year, we were very fortunate to have two distinguished invited speakers: Nicola Santoro and Toshimitsu Masuzawa.

Among the 29 selected papers, we considered 3 papers for special awards. The best paper award was given to Andrew Berns, Sukumar Ghosh, and Sriram V. Pemmaraju for “Building Self-Stabilizing Overlay Networks with the Transitive Cloture Framework”. The best student paper award was shared by Rizal Mohd Nor, Mikhail Nesterenko, and Christian Scheideler for “Corona: A Stabilizing Deterministic Message-Passing Skip List”, and Damien Imbs and Michel Raynal for “The Weakest Failure Detector to Implement a Register in Asynchronous Systems with Hybrid Communication”.

On behalf of the Program Committee, we would like to thank all the authors who submitted their work to SSS. We sincerely acknowledge the tremendous time and effort the Program Vice Chairs and the Program Committee members invested in the symposium. We are grateful to the external reviewers for their valuable and insightful comments. We also thank the members of the Steering Committee for their invaluable advice. We are grateful to the Organizing Committee members for their time and invaluable effort that greatly contributed to the success of this symposium.

Organizing this event would not have been possible without the support of the following organizations: ANR SPADES, CNRS, Elsevier, Grenoble Institute of Technology (INP), INRIA, Japan Advanced Institute of Science and Technology (JAIST), Lab. MIS (University of Picardie Jules Verne), Springer (LNCS), University Joseph Fourier (UJF), and VERIMAG. Finally, the process of paper submission, selection, and compilation in the proceedings was greatly simplified by the strong and friendly interface of the *EasyChair* system (<http://www.easychair.org>).

Dedication. We were supposed to organize SSS 2011 at Shinagawa (Tokyo), but after the terrible earthquake and tsunami that affected Japan and its people, the consequences on Fukushima Daiichi nuclear power station led us reluctantly to relocate the symposium to another country. On behalf of our community, we would like to dedicate SSS 2011 to Japan and its people.

October 2011

Xavier Défago
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