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Stabilization, Safety, and Security of Distributed Systems

20th International Symposium, SSS 2018
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Preface

The papers in this volume were presented at the 20th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS), held during November 4–7, 2018, in Tokyo, Japan.

SSS is an international forum for researchers and practitioners in the design and development of distributed systems with a focus on systems that are able to provide guarantees on their correctness, performance, and/or security in the face of an adverse operational environment. Research in distributed systems is now at a crucial point in its evolution, marked by the importance and variety of dynamic distributed systems such as peer-to-peer networks, large-scale sensor networks, mobile ad hoc networks, and cloud computing. Moreover, new applications such as grid and Web services, distributed command and control, and a vast array of decentralized computations in a variety of disciplines have driven the need to ensure that distributed computations are self-stabilizing, safe, secure, and efficient.

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 was 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, significant 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). From then, SSS conferences were held in Dallas (2006), Paris (2007), Detroit (2008), Lyon (2009), New York (2010), Grenoble (2011), Toronto (2012), Osaka (2013), Paderborn (2014), Edmonton (2015), Lyon (2016), and Boston (2017).

This year the program was organized into three tracks reflecting major trends related to distributed systems: (1) Theoretical and Practical Aspects of Stabilizing Systems, (2) Distributed Networks and Concurrency, and (3) Safety in Malicious Environment. We received 55 submissions from 13 countries. Each submission was reviewed by at least three Program Committee members with the help of external reviewers. Out of the submitted papers, 24 were selected for presentation as regular papers. The symposium also included five brief announcements. Selected papers from the symposium will be published in a special issue of the journal *Information and Computation*. The committee also selected the following papers to be awarded:

- *Best paper:* Keisuke Doi, Yukiko Yamauchi, Shuji Kijima and Masafumi Yamashita, "Exploration of Finite 2D Square Grid by a Metamorphic Robotic System"
- *Best student paper:* Chirag Juyal, Sweta Kumari, Archit Somani, Sathya Peri and Sandeep Kulkarni, "An Innovative Approach to Achieve Compositionality Efficiently Using Multi-Version Object Based Transactional Systems"

On behalf of the Program Committee, we would like to thank all the authors who submitted their work to SSS. Special thanks to the track Program Committee chairs, Shantanu Das, Swan Dubois, and Jared Saia, for the great work that they put in making the symposium a success. We sincerely acknowledge the tremendous time and effort that the Program Committee members invested in the symposium. We are grateful to the external reviewers for their valuable and insightful comments and to EasyChair for tremendously simplifying the reviewing process and the preparation of the proceedings.

We also thank the general chairs, Xavier Defago, Toshimitsu Masuzawa, and Koichi Wada, for their effort in putting together the symposium and their invaluable advice. We gratefully acknowledge the Organizing Committee members, Doina Bein, François Bonnet, Masahiro Shibata, Yuichi Sudo, Yasumasa Tamura, for their time and invaluable effort that greatly contributed to the success of this symposium.

November 2018

Taisuke Izumi
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