

# Preface

The International Conference on Autonomous Infrastructure, Management, and Security (AIMS 2017) is a single-track event targeted at junior researchers and PhD students in network and service management and security. It features a range of sessions including conference paper presentations, hands-on lab courses, and educational keynotes. One of the key goals of AIMS is to offer junior researchers and PhD students a dedicated place where they can discuss their research work and experience, receive constructive feedback from senior scientists, and benefit from practical hands-on sessions on emerging technologies. By putting the focus on junior researchers and PhD students, AIMS acts as a complementary piece in the set of international conferences in the network and service management community, providing an optimal environment for in-depth discussions and networking.

AIMS 2017 — which took place during July 10-13, 2017, in Zürich, Switzerland, and was hosted by the University of Zürich — was the 11th edition of a conference series on management and security aspects of distributed and autonomous systems. It followed the already established tradition of an unusually vivid and interactive conference series, after successful events in Munich, Germany, in 2016, Ghent, Belgium, in 2015, Brno, Czech Republic, in 2014, Barcelona, Spain, in 2013, Luxembourg, Luxembourg, in 2012, Nancy, France, in 2011, Zürich, Switzerland, in 2010, Enschede, The Netherlands, in 2009, Bremen, Germany, in 2008, and Oslo, Norway, in 2007.

AIMS 2017 focused on security of networks and services in an all-connected world. To address these challenges, solutions for the design, monitoring, configuration, and protection of the next generation of networked systems in an efficient, secure, and smart manner are investigated. The theme is reflected in the technical program with papers presenting novel approaches and evaluation studies for the security management of rich network services and environments. AIMS 2017 was organized as a 4-day program to encourage the active participation of and interaction with the audience. The program consisted of technical sessions for the main track and PhD sessions, interleaved with three lab sessions and two keynotes.

The lab sessions offered hands-on experience in the topics of security and advanced network management techniques, and were organized in on-site labs preceded by short tutorial-style teaching sessions. The first lab session was run by Martin Drašar (Masaryk University, Czech Republic) and focused on an introduction to security games. The second lab session was supervised by Thomas Bocek and Moritz Schneider (University of Zürich, Switzerland) and presented how to program smart contracts. Finally, the last session was held by Salvatore Signorello (University of Luxembourg, Luxembourg) and Jérôme François (Inria, France) and explored P4, the emerging high-level data plane programming language and its applicability to packet processors.

The keynotes were presented by two experts in their domain: Marcel Waldvogel (University of Konstanz, Germany), who discussed “Getting Rid of IoT Insecurity,” and Matthias Bossardt (KPMG, Switzerland), who shared his view with the audience on “Cyber Security Challenges – A Business Perspective.”

The technical program consisted of six sessions, divided into three full-paper sessions and three short-paper sessions. The three full-paper sessions covered technical presentations on the themes of: (1) Security Management, (2) Management of Cloud Environments and Services, and (3) Evaluation and Experimental Study of Rich Network Services. They included a total of eight full papers, which were selected after a thorough reviewing process out of 24 submissions. Each paper received at least three independent reviews. The three short-paper sessions included 11 short papers. These covered PhD research papers on the themes of “Methods for the Protection of Infrastructure and Services,” and “Autonomic and Self-Management Solutions” as well as six short presentations on the topic of “Security, Intrusion Detection, and Configuration.”

During all the PhD research presentations, doctoral students had the opportunity to present and discuss their research ideas, and more importantly to obtain valuable feedback from the AIMS audience about their PhD research work. All PhD research proposals included in this volume describe the current state of these investigations, including well-defined research problem statements, proposed approaches, and an outline of emerging and promising results achieved to date.

The present volume of the *Lecture Notes in Computer Science* series includes all papers presented at AIMS 2017 as defined within the overall final program. It demonstrates again the European scope of this conference series, since most of the accepted papers originate from European research groups. In addition, by hosting two tracks specifically dedicated to research proposals, AIMS 2017 stayed true to its defined DNA of a conference with a strong educational goal, focusing especially on issues and challenges associated with the security of networks and services.

The editors would like to thank the many people who helped to make AIMS 2017 such a high-quality and successful event. Firstly, many thanks are extended to all authors who submitted their contributions to AIMS 2017, and to the lab session speakers as well as the keynote speakers. The great review work performed by the members of the AIMS Technical Program Committee as well as additional reviewers is greatly acknowledged. Thanks also to Thomas Bocek and Martin Drašar for organizing the lab sessions. Additionally, many thanks are extended to the local organizers for handling logistics and hosting the AIMS 2017 event.

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