

# Preface

The International Conference on Autonomous Infrastructure, Management, and Security (AIMS 2016) is a single-track event integrating regular conference paper sessions, tutorials, keynotes, and a PhD student workshop into a highly interactive event. Within the network and service management community, AIMS is focused on PhD students and young researchers. One of the key goals of AIMS is to provide early-stage researchers with constructive feedback by senior scientists and give them the possibility to grow in the research community by means of targeted lab sessions on technical and educational aspects of their research activity. This focus on early-stage researchers is immediately observable in the program, featuring a high number of educational sessions and PhD sessions, where young PhD students present their research.

AIMS 2016 — which took place during June 20–23, 2016, in Neubiberg, Germany, and was hosted by the Universität der Bundeswehr München — was the tenth edition of a conference series on management and security aspects of distributed and autonomous systems. It followed the established tradition of an unusually vivid and interactive conference series, after successful events in 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 2016 focused on management and security in the age of hyperconnectivity. New paradigms, smart and fully distributed algorithms, and large-scale virtualization are investigated to design scalable and resilient frameworks able to deal with more complex, more dynamic and hyperconnected environments. This theme was addressed in the technical program with papers related to monitoring, configuration, and security in areas from cloud infrastructures to the Internet-of-Things. AIMS 2016 was organized as a 4-day program to encourage the interaction with and the active participation of the audience. The program consisted of technical sessions for the main track and PhD sessions, interleaved with research keynotes, an educational panel, and lab sessions.

The lab sessions offered hands-on experience in network and service management topics and they were organized in on-site labs preceded by short tutorial-style teaching sessions. The first lab session addressed big data analysis for the Domain Name System (DNS), explaining how tracking DNS changes based on measurements may provide valuable information about the evolution of the Internet. The other lab sessions were centered on traffic mining for flow-based forensic and network troubleshooting, using Tranalyzer, a lightweight flow generator and packet analyzer designed for practitioners and researchers. In line with its educational mission, this year the conference also included an educational panel, which was chaired by Daphné Tuncer and Marinos Charalambides (University College London, UK) on “Experiences with MOOCs and Flipped Classrooms.” Additionally, AIMS 2016 featured two research keynotes: one on “Today’s Cyber Security Threats and Challenges for Telco Providers” by Bernd

Eßer (Telekom CDC, Germany) and one on “Cyber Resilience of Complex Interdependent Infrastructures” by Tobias Kiesling (IABG, Germany).

The technical program consisted of two sessions — covering the topics of automatic and smart management, and security attacks and defenses — and included seven full papers, which were selected after a thorough reviewing process out of a total of 22 submissions. Each paper received at least three independent reviews. Three papers were also selected for presentation as short papers.

The AIMS PhD workshop is a venue for doctoral students to present and discuss their research ideas, and more importantly to obtain valuable feedback from the AIMS audience about their planned PhD research work. This year, the workshop was structured into two technical sessions covering the management of future networks and security management. All PhD papers included in this volume describe the current state of these investigations, including their clear research problem statements, proposed approaches, and an outline of results achieved so far. A total of nine PhD papers were presented and discussed. These papers were selected after a separate review process out of 21 submissions, while all PhD papers received at least three independent reviews.

The present volume of the *Lecture Notes in Computer Science* series includes all papers presented at AIMS 2016 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. Also, AIMS 2016 proved true to its defined DNA of a conference with a strong educational goal, as indicated by the number of submissions attracted by the PhD Workshop.

The editors would like to thank the many people who helped to make AIMS 2016 such a high-quality and successful event. Firstly, many thanks are extended to all authors who submitted their contributions to AIMS 2016, and to the lab session speakers, namely, Anna Sperotto, Mattijs Jonker, Christian Dietz, Stefan Burschka, and Benoît Dupasquier, and the keynote speakers Bernd Eßer and Tobias Kiesling. The great review work performed by the members of both the AIMS Technical Program Committee and the PhD Student Workshop Committee as well as additional reviewers is highly acknowledged. Thanks are also addressed to Volker Eiseler and Lars Stiemert for setting up and organizing the lab sessions. Additionally, many thanks to the local organizers for handling all the logistics and hosting the AIMS 2016 event.

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Rémi Badonnel  
Robert Koch  
Martin Drašar  
Aiko Pras

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