

Preface

This volume contains the proceedings of the 17th International Conference on Runtime Verification (RV 2017), which was held on September 13–16, 2017 at the Sheraton Hotel, Seattle, USA.

The RV series consists of annual meetings that gather together scientists from both academia and industry interested in investigating novel lightweight formal methods to monitor, analyze, and guide the runtime behavior of software and hardware systems. Runtime verification techniques are crucial for system correctness, reliability, and robustness; they provide an additional level of rigor and effectiveness compared with conventional testing, and are generally more practical than exhaustive formal verification. Runtime verification can be used prior to deployment, for testing, verification, and debugging purposes, and after deployment for ensuring reliability, safety, and security and for providing fault containment and recovery as well as online system repair.

RV started in 2001 as an annual workshop and turned into a conference in 2010. The workshops were organized as satellite events to an established forum, including CAV and ETAPS. The proceedings of RV from 2001 to 2005 were published in the Electronic Notes in Theoretical Computer Science. Since 2006, the RV proceedings have been published in Springer’s Lecture Notes in Computer Science. The previous five RV conferences took place in Istanbul, Turkey (2012); Rennes, France (2013); Toronto, Canada (2014); Vienna, Austria (2015); and Madrid, Spain (2016).

RV 2017 received 58 submissions, 47 of which were regular papers, 8 short papers, and 3 regular tool papers. Almost all papers were reviewed by four reviewers. The Program Committee accepted 18 regular papers, 5 short papers, and 4 regular tool papers, where 4 regular papers were accepted as short or tool papers. The evaluation and selection process involved thorough discussions among the members of the Program Committee and external reviewers through the EasyChair conference manager, before reaching a consensus on the final decisions.

To complement the contributed papers, we included in the program three invited speakers covering both industry and academia:

- Rodrigo Fonseca, an associate professor in Brown University’s Computer Science Department, gave a talk about the design and applications for a tracing plane for distributed systems;
- Vladimir Levin and Jakob Lichtenberg from Microsoft’s driver quality team gave a talk about the Windows Driver Verification Platform;
- Andreas Zeller, a full professor for software engineering at Saarland University, gave a talk about learning input languages for runtime verification.

The conference included three tutorials that took place on the first day. The following tutorials were selected to cover a breadth of topics relevant to RV:

- Adrian Francalanza presented a tutorial on “Foundations for Runtime Monitoring”;
- Ankush Desai and Shaz Qadeer presented a tutorial on “P : Modular and Safe Asynchronous Programming”;
- Madhusudan Parthasarathy presented a tutorial on “Machine-Learning State Properties”.

RV 2017 was also colocated with RV-CuBES, an international workshop on competitions, usability, benchmarks, evaluation, and standardization for runtime verification tools. This workshop was integrated into the RV program as dedicated poster and discussion sessions. RV-CuBES has separate proceedings consisting of tool overview and position papers.

We would like to thank the authors of all submitted papers, the members of the Program Committee, and the external reviewers for their exhaustive task of reviewing and evaluating all submitted papers. We highly appreciate the EasyChair system for the management of submissions. Finally, we would like to extend our special thanks to the general chair, Klaus Havelund, for his leading role in the organization of RV 2017.

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Shuvendu Lahiri
Giles Reger

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