

# FormaliSE 2020

8<sup>th</sup> International Conference on

## Formal Methods in Software Engineering

May 25-26, Seoul, South Korea, co-located with ICSE 2020

<https://www.formalise.org>



### Call for Papers

The software industry has a long-standing and well-earned reputation for failing to deliver high-quality software. Much progress has been achieved from the early days of software development; still, nowadays, even considering the state of the art of the technologies used, the success of software projects is often not guaranteed. Many of the approaches used for developing large, complex software system are still not able to ensure the correct behaviour — and the general quality — of the delivered product, despite the efforts of the (often very qualified and skilled software engineers involved. This is where formal methods can play a significant role. Indeed, they have been developed to provide the means for greater precision and thoroughness in modeling, reasoning about, validating, and documenting the various aspects of software systems during their development. When carefully applied, formal methods can aid all aspects of software creation: user requirement formulation, design, implementation, verification/testing, and the creation of documentation.

After decades of research though, and despite significant advancement, formal methods are still not widely used in industrial software development. We believe that a closer integration of formal methods in software engineering can help increase the quality of software applications, and at the same time highlight the benefits of formal methods in terms also of the generated return on investment (ROI).

The main objective of the conference is to foster the integration between the formal methods and the software engineering communities, to strengthen the — still too weak — links between them, and to stimulate researchers to share ideas, techniques, and results, with the ultimate goal to propose novel solutions to the fraught problem of improving the quality of software systems.

Originally a successful satellite workshop of ICSE, since 2018 FormaliSE is organised as a conference co-located with ICSE. FormaliSE 2020 will take place on May 25-26, 2020, in Seoul, South Korea.

### Topics

Areas of interest include but are not limited to:

- approaches and tools for verification and validation;
- application of formal methods to specific domains, e.g., autonomous, cyber-physical, intelligent, and IoT systems;
- scalability of formal methods applications;
- integration of formal methods within the software development lifecycle (e.g., change management, CI/CD)
- requirements formalization and formal specification;
- model-based engineering approaches;
- performance analysis based on formal approaches;
- formal methods in a certification context;
- formal approaches for safety and security-related issues;
- usability of formal methods;
- guidelines to use formal methods in practice;
- case studies developed/analyzed with formal approaches;
- experience reports on the application of formal methods to real-world problems.

### Paper Submission and Publication

We invite you to submit:

- Full research papers that must describe authors' original research work and results.
- Case study papers that should identify lessons learned, validate theoretical results (such as scalability of methods) or provide specific motivation for further research and development.
- Research ideas: FormaliSE encourages the submissions of new research ideas in order to stimulate discussions at the conference.

Full and case study papers are limited to 10 pages, including all text, figures, tables, and appendices, plus up to 2 additional pages of references; research ideas papers are limited to 4 pages plus up to 1 additional page of references. Submissions should follow the ACM Formatting Guidelines (<http://www.acm.org/publications/article-templates/proceedings-template>), must be unpublished original work and should not be under review or submitted elsewhere while being under consideration.

Submissions to FormaliSE 2020 can be made via the submission site (<https://formalise2020.hotcrp.com>) by the submission deadline. Each paper will be reviewed by at least three program committee members. Papers will be judged on the basis of their clarity, relevance, originality, and contribution to the field. All accepted publications are published as part of the ICSE 2020 Proceedings in the ACM and IEEE Digital Libraries.

### General Chairs

*Stefania Gnesi*, ISTI CNR, Italy  
*Nico Plat*, Thanos, The Netherlands

### Program Chairs

*Kyungmin Bae*, POSTECH (Pohang University of Science and Technology), South Korea  
*Domenico Bianculli*, University of Luxembourg, Luxembourg

### Program Committee

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*Kazuhiro Ogata*, Japan Advanced Institute of Science and Technology, Japan  
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*Paola Spoletini*, Kennesaw State University, USA  
*Meng Sun*, Peking University, China  
*Stefano Tonetta*, FBK, Italy  
*Michael Whalen*, Amazon, Inc., USA

### Important Dates

Abstract Submission: January 9, 2020  
Paper Submission: January 16, 2020  
Notification: March 1, 2020  
Camera-Ready: March 16, 2020