

# Preface

This volume contains the invited and contributed papers selected for presentation at SOFSEM 2018, the 44th International Conference on Current Trends in Theory and Practice of Computer Science, which was held at Danube University Krems from January 29 to February 2, 2018. For the first time, Austria was the host country of the prestigious SOFSEM conference series.

SOFSEM (originally SOFtware SEMinar) is devoted to leading research and fosters the cooperation among researchers and professionals from academia and industry in all areas of computer science. As a well-established and fully international conference, SOFSEM has kept the best of its original Winter School aspects, such as a substantial number of invited talks (seven for the year 2018) and an in-depth coverage of novel research results in selected areas of computer science. SOFSEM 2018 was organized around the following three tracks:

- Foundations of Computer Science  
(chaired by Jan van Leeuwen and Jiří Wiedermann),
- Software Engineering: Advanced Methods, Applications, and Tools – SEMAT  
(chaired by Stefan Biffl),
- Data, Information, and Knowledge Engineering  
(chaired by Ladjel Bellatreche).

With these three tracks, SOFSEM 2018 covered the latest advances in both theoretical and applied research in leading areas of computer science. The SOFSEM 2018 Program Committee consisted of 89 international experts from 33 different countries, representing the track areas with outstanding expertise.

An integral part of SOFSEM 2018 was the traditional SOFSEM Student Research Forum (chaired by Roman Špánek) organized with the aim of presenting student projects on both the theory and practice of computer science, and to give the students feedback on the originality of their results. The papers presented at the Student Research Forum are published in separate local proceedings.

In response to the call for papers, SOFSEM 2018 received 108 submissions by 246 authors from 32 different countries. The submissions were distributed in the conference tracks as follows: 60 in Foundations of Computer Science, 25 in Software Engineering: Advanced Methods, Applications, and Tools, and 23 in Data, Information, and Knowledge Engineering. From these, 25 submissions fell in the student category.

After a detailed reviewing process, with approximately three reviews per paper in every track, a careful selection procedure was carried out using the EasyChair Conference System for an electronic discussion. Following strict criteria of quality and originality, 41 papers were selected for presentation, namely: 26 in Foundations of Computer Science, 7 in Software Engineering: Advanced Methods, Applications, and Tools, and 8 in Data, Information, and Knowledge Engineering. From these, 10 were student papers.

Based on the recommendation of the chair of the Student Research Forum and with the approval of the track chairs and Program Committee members, seven more student papers were chosen for the SOFSEM 2018 Student Research Forum.

We are greatly indebted to the many colleagues who contributed to the scientific program of the conference, especially the invited speakers and all authors of the submitted papers. We also thank the authors of the accepted papers for their prompt responses to our editorial requests.

SOFSEM 2018 was the result of a concerted effort by many people. We would like to express our special thanks to the members of the SOFSEM 2018 Program Committee and all external reviewers for their precise and detailed reviewing of the submissions, Roman Špánek for his handling of the Student Research Forum, Fajar J. Ekaputra for his efforts on the proceedings, Springer's LNCS team for its great support, and the local Organizing Committee for the support and preparation of the conference.

Finally we want to thank the Danube University Krems and the Austrian Computer Society (especially Christine Haas) for their invaluable support, which made it possible to host SOFSEM in Austria for the first time.

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A Min Tjoa  
Ladjel Bellatreche  
Stefan Biffl  
Jan van Leeuwen  
Jiří Wiedermann



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