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Luca Bortolussi · Guido Sanguinetti (Eds.)

Computational Methods in Systems Biology

17th International Conference, CMSB 2019
Trieste, Italy, September 18–20, 2019
Proceedings

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Preface

This volume contains the papers presented at CMSB 2019, the 17th Conference on Computational Methods in Systems Biology, held during September 18–20, 2019, at the University of Trieste, Italy.

The CMSB annual conference series, initiated in 2003, provides a unique discussion forum for computer scientists, biologists, mathematicians, engineers, and physicists interested in a system-level understanding of biological processes. Topics covered by the CMSB proceedings include: formalisms for modeling biological processes; models and their biological applications; frameworks for model verification, validation, analysis, and simulation of biological systems; high-performance computational systems biology and parallel implementations; model inference from experimental data; model integration from biological databases; multi-scale modeling and analysis methods; computational approaches for synthetic biology; and case studies in systems and synthetic biology.

This year there were 53 submissions in total for the 4 conference tracks. Each regular submission and tool paper submission were reviewed by at least three Program Committee members. Additionally, tools were subjected to an additional review by members of the Tool Evaluation Committee, testing the usability of the software and the reproducibility of the results. For the proceedings, the Program Committee decided to accept 14 regular papers, 7 tool papers, and 11 short papers. This rich program of talks was complemented by a poster session, providing an opportunity for informal discussion of preliminary results and results in related fields.

In view of the broad scope of the CMSB conference series, we selected the following five high-profile invited speakers: Kobi Benenson (ETH Zurich, Switzerland), Trevor Graham (Barts Cancer Hospital, London, UK), Gaspar Tkacik (IST, Austria), Adelinde Uhrmacher (Rostock University, Germany), and Manuel Zimmer (University of Vienna, Austria). Their invited talks covered a broad area within the technical and applicative domains of the conference, and stimulated fruitful discussions among the conference attendees.

Further details on CMSB 2019 are available on the following website: <https://cmsb2019.units.it>.

Finally, as the program co-chairs, we are extremely grateful to the members of the Program Committee and the external reviewers for their peer reviews and the valuable feedback they provided to the authors. Our special thanks go to Laura Nenzi as local organization co-chair, Dimitrios Milios as chair of the Tool Evaluation Committee, and to François Fages and all the members of the CMSB Steering Committee, for their advice on organizing and running the conference. We acknowledge the support of the EasyChair conference system during the reviewing process and the production of these proceedings. We also thank Springer for publishing the CMSB proceedings in its *Lecture Notes in Computer Science* series.

Additionally, we would like to thank the Department of Mathematics and Geosciences of the University of Trieste, for sponsoring and hosting this event, and Confindustria Venezia Giulia, for supporting this event and providing administrative help. Finally, we would like to thank all the participants of the conference. It was the quality of their presentations and their contribution to the discussions that made the meeting a scientific success.

September 2019

Luca Bortolussi
Guido Sanguinetti

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