

# Preface

This volume contains the papers presented at Euro-Par 2017: the 23rd International Conference on Parallel and Distributed Computing, held from 28 August to 1 September 2017 in Santiago de Compostela (Spain).

Euro-Par is a prestigious annual series of international conferences dedicated to parallel and distributed computing. The topics covered by the conference include aspects related to both software and hardware technologies and, in particular, applications in different hardware platforms, ranging from small embedded systems to cloud computing and supercomputers. The specific topics on which the conference focuses have been renewed along the years extending the state of the art in the field. Nowadays, the challenges of building exascale performance computing systems and their programming are among the main motivations in the parallel and distributed computing community. This challenge opens opportunities to deal with issues related to health, climate, security, and many more. Various topics are deeply impacted by this scenario like energy optimization, scalability, heterogeneous computing, fault-tolerance, etc.

The main audience of Euro-Par are researchers in academic institutions, public and private laboratories, and industrial organizations. Euro-Par's main objective is to be the primary choice of such professionals for the presentation of new results in the field.

Previous Euro-Par conferences took place in Stockholm, Lyon, Passau, Southampton, Toulouse, Munich, Manchester, Paderborn, Klagenfurt, Pisa, Lisbon, Dresden, Rennes, Las Palmas, Delft, Ischia, Bordeaux, Rhodes, Aachen, Porto, Vienna, and Grenoble. This year Euro-Par 2017 was the 23rd conference and was organized in Santiago de Compostela, Spain, by the IT Research Centre of the University of Santiago de Compostela, called CiTIUS – Centro de Investigación en Tecnoloxías da Información. The topics were organized into 12 tracks, namely: Support Tools and Environments; Performance and Power Modelling, Prediction and Evaluation; Scheduling and Load Balancing; High-Performance Architectures and Compilers; Parallel and Distributed Data Management and Analytics; Cluster and Cloud Computing; Distributed Systems and Algorithms; Parallel and Distributed Programming, Interfaces, and Languages; Multicore and Manycore Parallelism; Theory and Algorithms for Parallel Computation and Networking; Parallel Numerical Methods and Applications; and Accelerator Computing. In all, 176 papers were submitted from 39 countries from all continents. Finally, only 50 papers were accepted in a selection meeting in which all the global or local chairs, as well as three members of the Steering Committee, participated. A selective rate of acceptance of 28.4% resulted: 691 reviews were performed by 317 experts; 151 papers received four reviews, 19 papers were reviewed by three experts, and 6 papers by five. The huge work of bringing many innovative ideas by the Scientific Committee made that the evaluation and selection processes proceed smoothly.

Apart from the parallel sessions to present the accepted papers, we were pleased to present two keynote talks of well-recognized colleagues, namely, David Padua “High-Level Abstractions and Automatic Optimization Techniques for the Programming of Irregular Algorithms,” and Jürgen Döllner “Software Analytics – Effectively Managing Complex Software Systems,” as well as an invited paper by Ian Foster et al. entitled “Computing Just What You Need: Online Data Analysis and Reduction at Extreme Scales.” The program was complemented by two days of dedicated workshops and tutorials on specialized topics. The huge task of managing them was efficiently conducted by Dr. Dora B. Heras. The selected papers will be published in separated proceedings volumes after the conference.

The Euro-Par conference in Santiago de Compostela would not have been possible without the support of many individuals and organizations. We owe special thanks to the authors of all the submitted papers, the members of the topic committees, in particular the global and local chairs, as well as the reviewers for their contributions to the success of the conference. We would also like to express our gratitude to the members of the Organizing Committee and the local staff who helped us. Moreover, we are indebted to the members of the Euro-Par Steering Committee, especially Christian Lengauer, Luc Bougé, and Fernando Silva, for their trust, guidance, and support. Finally, a number of institutional and industrial sponsors contributed to the organization of the conference. Their names appear on the Euro-Par 2017 website.

It was a pleasure and an honour to organize and host Euro-Par 2017 in Santiago de Compostela.

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