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Network and Parallel Computing

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Proceedings

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Preface

Welcome to the proceedings of the eighteenth edition of the International Conference on Network and Parallel Computing (NPC 2021), held in Paris, France, during November 3–5, 2021.

First, we would like to honor the memory of Guang R. Gao, who, on top of having spent his life making substantial contributions to the field of high-performance computing in general, was a driving force behind NPC. Along with a few other people from the NPC Steering Committee, he suggested to hold NPC outside of Asia to broaden its audience, and have it occur in a European venue.

Second, we would like to thank all the committee members, from the program vice-chairs to the local organizing chairs and the reviewers. We are thinking in particular of Aziza Lounis from DNAC, Abdulhalim Dandoush from ESME Sudria, Éric Renault from ESIEE Paris, and Khaled Boussetta from Université Sorbonne Paris Nord. A special thank you to En Shao from the Institute of Computing Technology (ICT), China. And of course, we should not forget the extremely constructive influence of Kemal Ebcioglu.

A word of gratitude to the staff at the IEEE Computer Society and at IFIP for their indefatigable work. They immensely contributed to improving the scientific impact of NPC. We thank all the people we interacted with to improve the scientific impact of NPC. They will recognize themselves.

This conference was organized in cooperation with two IEEE Technical Committees (TCS) and two IEEE Special Technical Communities (STC):

–Technical Committee on Parallel Processing - TCPP, Anne Benoit, France.
–Technical Committee on Cloud Computing - TCCLD, Robert Hsu, Taiwan.
–Special Technical Community on Multicore - STC Multicore, Lawrence Rauchwerger, USA.
–Special Technical Community on Dataflow - STC Dataflow, Guang R. Gao, USA and Stéphane Zuckerman, France.

Finally, we would like to thank our home institutions for their support: CY Cergy Paris Université, Université Sorbonne Paris Nord (USPN) including the MathSTIC research group, ESIEE, ESME Sudria, and Université Gustave Eiffel. Thank you very much, we greatly appreciated their help and assistance.

A total of 62 submissions were received in response to our call for papers. These papers originated from Asia (China and Japan), Africa, Europe, and North America (USA). Each submission was sent to at least three reviewers, with an average of four reviewers per submission, and up to six reviewers. Each paper was judged according to its originality, innovation, readability, and relevance to the expected audience. Based on the reviews received, 20 full papers (about 32%) were selected to be published as LNCS proceedings. Among these, six papers were further selected to be extended and submitted to a Special Issue in the International Journal of Parallel Programming. Four main themes were identified during the conference: Networks and Communications; Storage; System

Software; and Applications and Algorithms. Two "Best Papers" sessions were also held, the first of which was oriented toward storage issues, while the other one was geared toward applications and algorithms.

We would also like to recognize our three guest speakers who gave exciting presentations: Yutang Lu, Sun Yat-sen University, China, who demonstrated current and future challenges to build and program supercomputers; Avi Mendelson, Technion, Israel, who spoke about data-centric computations for future high-performance systems; and Anne Benoit, ENS Lyon, France, who tackled the issue of resilience and fault-tolerance in current and future supercomputing systems.

Enjoy NPC 2021!

November 2021

Christophe Cérin
Depei Qian
Jean-Luc Gaudiot
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Stéphane Zuckerman

Organization

NPC 2021 was jointly organized by ESME Sudria, ESIEE Paris, Université Gustave Eiffel, Laboratoire d'Informatique Gaspard Monge (LIGM), CY Cergy Paris Université, Université Sorbonne Paris Nord, and DNAC.

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