ACM Europe Summer School on HPC Computer Architectures for AI and Dedicated Applications

Objectives

Welcome to the 2024 ACM Summer School! This year's program focuses on the convergence of High-Performance Computing (HPC) and Artificial Intelligence (AI), and it will also explore emerging research areas such as Quantum Computing. The 2024 ACM Summer School on "HPC Computer Architectures for AI and Dedicated Applications" will take place from 2 to 6 September in Barcelona, Spain. The Barcelona Supercomputing Center (BSC-CNS) and the Universitat Politècnica de Catalunya (UPC) will host the school.

ACM, the Association for Computing Machinery, is the school's main sponsor. The sponsor participation is still being finalized; we will soon upload the list of our final sponsors.

The summer school is designed for young computer science researchers and engineers and is open to outstanding MSc students. Sixty accepted participants will spend one week in Barcelona, attending formal lectures, invited talks, and other activities. The school will cover accommodation expenses and catering during school hours. Travel expenses will be at the charge of the students. Students will be hosted in double shared rooms in a comfortable 4* hotel where the lectures will be held. The hotel is close to the Barcelona Supercomputing Center and the Polytechnic University of Catalonia.

After Prof. Mateo Valero's opening keynote lecture, Michaela Taufer (The University of Tennessee, Knoxville) and Josep Lluís Berral (BSC & UPC) will provide an introduction about AI & HPC and distributed data analytics. On the second day of the school, Andrea Bartolini (University of Bologna) and Mauro Olivieri (Sapienza University) will dedicate their lectures to RISC-V based microprocessor design. To conclude the second day, Luca Benini (University of Bologna) will deliver a remote presentation. On day three, Jes Labarta (BSC) will lecture on highly parallel techniques and performance optimisation, and Rosa Badia (BSC & UPC) will cover topics related to HPC workflows. Paul Messina and Charles Catlett (Argonne National Laboratory) will coordinate the fourth day of the school, linking the programme with the Trillion Parameter Consortium initiative (TPC). Marta Villegas (BSC), Miguel Vázquez (BSC), and Arvind Ramanathan (Argonne National Laboratory) will AI and Large Language Models. The school's final day will be devoted to quantum computing by Marta Estarellas (Quilimanjaro Quantum Tech) and an industry session. In addition, the Turing laureate Leslie Lamport will entertain a conversation on his past scientific life and current research activities. BSC's Director, Mateo Valero, will close the school with a final keynote.

All attendees will receive a complimentary ACM student membership upon school completion. During the one-year complimentary membership, students will receive electronic subscriptions to Communications of the ACM, ACM's flagship magazine, and XRDS, ACM's magazine written and edited by students for students. Students will also receive access to online books, videos and courses from leading provider Skillsoft on today's most sought-after job skills. And much more.

The general Chairperson of the school is Prof. Mateo Valero, Director of the Barcelona Supercomputing Center. Dr Fabrizio Gagliardi (ACM and BSC) is the school's Director and co-leads the local organising committee with Prof. Eduard Ayguadé (BSC and UPC), Prof. María Ribera Sancho (BSC and UPC), Dr. Teresa Cervero (BSC), Dr. Amalia Hafner (BSC), and Ms Andrea Sansano (BSC).

New application deadline: June 30th end-of-day AoE.

Accepted candidates will be informed by 1 July.

- Further information here.

Sponsors

Barcelona Supercomputing Center - Centro Nacional de Supercomputación