

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

### Objectives

The summer school is open to young computer science researchers and engineers, outstanding MSc students, and senior undergraduate students. Accepted participants will attend formal lectures and practical hands-on sessions.

Upon successful completion of the school, all attendees will receive a certificate. Based on scores obtained in practical exercises, the best performing students will receive certificates of honour.

Prof. Luca Benini (ETHZ and University of Bologna) will lecture on AI acceleration. Prof. Charlotte Frenkel (Delft University of Technology) will cover Neuromorphic engineering for low-power edge intelligence. BSC scientists: Ken Kennedy laureate Prof. Jesús Labarta, Dr. Filippo Mantovani, and Dr. Roger Ferrer will address state-of-the-art HPC architectures, focusing on vector acceleration. Prof. Jordi Torres and Dr. Josep Lluís Berral (BSC and UPC) will cover topics related to software for AI applications including deep learning and distributed data analytics in HPC. Prof. Mauro Olivieri (University of Rome) will address customised vector acceleration in edge-computing RISC-V soft-cores. Dr. Valerie Taylor (Argonne National Laboratory) will provide a tutorial on “Exploring Energy-Efficiency Tradeoffs for Parallel Scientific Applications.”

In addition to lectures, the summer school will include tutorials by Prof. Uri Weiser (Technion) on “Innovation Path: From General Purpose CPU to Machine Learning Accelerator,” and Prof. Per Stenström (Chalmers University of Technology) on the European Processor Initiative. The school will also include invited talks by Prof. Carme Torras, Dr Rosa M. Badia (BSC) and Prof. Ruth Lennon (ACM-W Chair). ACM's newly elected president Prof. Yoannis Ioannidis will deliver a welcome address to all the students. Moreover, Prof. Mario Kovač (Zagreb University) will review the European Processor Initiative (EPI), the flagship project of the EuroHPC Joint Undertaking. Dr. Josephine Wood (EuroHPC-JU) will moderate a panel on “The Future of HPC,” The school will conclude with a final keynote by BSC founder and Director Prof. Mateo Valero (BSC).

The school chair is Prof. Mateo Valero, and the local organizing committee is led by Dr. Fabrizio Gagliardi (BSC and ACM) and Prof. Eduard Ayguadé (UPC and BSC).

Student participation in the school is free of charge, and the ACM School will cover living expenses related to accommodation and meals for the duration of the school. However, travel costs will not be covered. For exceptionally meritorious students who cannot afford the cost of travel, the school will provide travel grants up to €250 upon successful completion of the school week.

The Association for Computing Machinery (ACM) is the main sponsor of the school. The industry sponsors are IBM and Huawei.

The online application form is available via the following link:

[https://services.acm.org/hpc\\_summer\\_school/summer\\_school.cfm](https://services.acm.org/hpc_summer_school/summer_school.cfm)

- Registration closes **1 July 2022**.

**Further information here:** <https://europe.acm.org/2022-hpc-summer-school>

Barcelona Supercomputing Center - Centro Nacional de Supercomputación

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