



CSCS

Centro Svizzero di Calcolo Scientifico
Swiss National Supercomputing Centre

Università
della
Svizzera
italiana

Summer School 2019

Effective High-Performance Computing & Data Analytics with GPUs

July 15 - July 25, 2019

Steger Center, Riva San Vitale, Ticino, Switzerland

The program of the CSCS-USI Summer School 2019 will focus on the effective exploitation of state-of-the-art hybrid High-Performance Computing (HPC) systems with a special focus on Data Analytics.

Starting from an introductory explanation of the available systems at CSCS, the course will progress to more applied topics such as parallel programming on accelerators, code optimization, scientific libraries, and deep learning software frameworks.

Extensive practical and exercise lab sessions will help to clarify and consolidate the theoretical material.

The following topics will be covered:

- GPU architecture
- GPU programming with CUDA and OpenACC
- Message passing programming model (MPI)
- Performance optimization and scientific libraries
- Interactive supercomputing
- Python HPC libraries
- Introduction to Machine Learning and GPU optimized frameworks (Rapids)
- Deep Learning on HPC platforms (TensorFlow)

The Summer School addresses **intermediate graduate students**, which includes students with a Master's degree, Ph.D. students, and early stage postdocs.

Students will be able to earn six ECT credit points for this course from Università della Svizzera italiana (subject to exam).

For additional information, application and fees: www.cscs.ch/events

Deadline for application: **Thursday, April 25, 2019**

The summer school is supported by:

- *The Swiss Graduate School FOMICS - "Foundations in Mathematics and Informatics for Computer Simulations in Science and Engineering", which is located at the Institute of Computational Science (www.ics.usi.ch) at USI in Lugano, Switzerland.*
- *The Swiss National Supercomputing Centre (www.cscs.ch) in Lugano, Switzerland*

