

# The Fourth International School on Open Science Cloud (SOSC 2022)

The 4th edition of the international School on Open Science Cloud (SOSC 2022) will be held in **Perugia, from 28 November to 2 December 2022**. The school is organized by INFN, the Department of Physics of the University of Bologna and the Departments of Physics and Geology of the University of Perugia.

## Basic Requirements

The School is multi-disciplinary and targeted at postgraduate researchers including bachelor degree or equivalent in fields such as physics, statistics, computer science, computer vision, biology, medicine, bioinformatics, engineering, working at any research institute, with some experience and interest in data analysis, in computing or in related fields. We welcome applications from all nationalities, and encourage all qualified persons to apply.

## Academic Program

The SOSC 2022 theme is “**Computing Models for Scientific Experiments**”. The school programme is organized in three main tracks:

### Fundamentals

- Managing software and data
- Tools for Data Handling and Processing

### Machine Learning

- Introduction to Machine and Deep Learning
- Data Science

### Workflow Management

- Cloud Solutions for Advanced Big Data Workflows

The aim of the school is to provide theoretical and practical training intended for students who are looking to develop their knowledge and skills on how to exploit data and computing resources for scientific applications, as well as use cloud-based infrastructures to implement workflows.

To this end, the first track will provide an overview of the main challenges related to the design of a scientific computing model, introducing concepts such as software management, containerization, application distribution and deployment.

After key tools for data handling and data processing are described, the second track will provide an introduction to Machine Learning, including some more advanced lectures aimed to improve skills on Data Science techniques and applications.

The third track will finally provide students with knowledge on how to organize workflows and pipelines in a distributed environment. Novel and effective approaches to interactive and

quasi-interactive parallel processing of data sets will then be covered.

The school is structured in lectures and hands-on sessions. The hands-on sessions are designed to allow students to exercise with the most popular systems introduced in the lectures, taking tasks from real-world leading data-driven scientific communities as examples. The hands-on programme foresees the development of individual projects.

The lectures and the hands-on sessions will be given by experts involved in the European Open Science Cloud landscape.

SOSC 2022 will also propose a special session on FPGA (Field Programmable Gate Array). Scientific computing is moving towards the exploitation of more and more heterogeneous resources. Hardware accelerators such as: GPU and TPU are nowadays very popular. The use of FPGA-based accelerators takes on an additional value, due to the intrinsic reprogrammability and high-performance characteristics of these devices.

## SOSC Certificate and Diploma

An attendance certificate will be provided to the students attending the whole school programme.

The school will also issue an official "SOSC School of Computing Diploma" upon successful completion of a project that will be assigned during the school.

## Fees and Enrollment

The registration fee includes morning & afternoon coffee breaks, the social dinner and participation in an evening Focus talk on FPGA, also with dinner. The **final application deadline for registrations is November 14, 2022**. Lunch, accommodation and transfer to/from the school location is not included in the fee.

The registration fee structure is as follows:

- **Early bird** (until September 30): **€200** -
- **Full ticket** (until November 14): **€300** -

Details about Registration and Payment Method can be found [here](#)

Support for a limited number of applications is possible and can be requested directly to the School secretariat.

**If you have any issues with the registration or the payment please contact [sosc22-pc@lists.infn.it](mailto:sosc22-pc@lists.infn.it)**

## Additional Information

Participation is limited to 30 participants. In case there are more than 30 registration requests, the organizing committee will make a selection based on the scientific CV of the applicants, informing them of the results.

# Venue

**INFN Perugia**, Via Alessandro Pascoli, 23c 06123 Perugia

Detailed information about the school, transportations, logistics and lectures are available at the following URL: [Travel & Accomodation](#)

# School Contact

School On Open Science Cloud 2022 - November 28th December 2nd 2022

SOSC22 URL: <https://web.infn.it/SOSC22>

## **The organizing committee**

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