SOSC 2022 Fourth International School on Open Science Cloud

SOSC22 Welcome and Logistics

Daniele Spiga, INFN-Perugia spiga@pg.infn.it

28 November 2022 to 2 December 2022 INFN Perugia

Welcome to Perugia and to SOSC 2022



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PhD School on Open Science Clo Perugia, June 5-9, 2017 SOSC 2018 Second International PhD Sch		•	The 20 years l o F 23 stud staff, a	long Fourt dents
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Overview Second International PhD School on Open Science Cloud			Cl	oud
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School on Open Science Cloud		Overview		The t
		Scientific Progr	ramme	Scien

The theme of the third International School on Open Science Cloud is "Intelligent Systems"

Open Science Cloud) is jointly organized ity of Perugia and University of Bologna.

- edition of SOSC comes to Perugia after 2 break due to pandemic
 - th Edition
- s, few auditors from INFN and University v traditional blending among theory and

	SOSC 2022 Fourth International S Cloud	chool on Open Science
November 2022 to 2 I N Perugia pe/Rome timezone	December 2022	Enter your search term O
	School on Open Science Cloud	
verview cientific Programme	The theme of the fourth International School on Open Scientific Experiments"	Science Cloud is "Computing Models for

spiga@pg.infn.it

SOSC22 - 28.12.2022 Perugia



Logistic and Events

In order to attend the school, you must register and check in.

- If you have not done so yet, please tell us and we will take care of the registration process.

Wireless access is available either via eduroam, or via a special SSID.

- If you do not have eduroam, contact us and we will provide your credentials.

All the sessions of the school will be held in the "Aula di Informatica"

- feel free to choose your working station and keep it until friday

The school provides you with a **working station** to grant you the same environment for the hands-on & to develop the individual project (Thanks to INFN-Cloud resources)

- Nothing prevent you to use your laptop, we simply don't suggest it

Given we also have international students, the lectures will be in English



Logistic and Events (cont.)

Each morning you should sign the presence

Coffee breaks will be served here in this room at mid-morning and mid-afternoon (included in the Fee)

Events:

- 1. A welcome event with buffet this night in conjunction with a focus event on FPGA (included in the Fee)
- 2. Social Dinner on Wednesday (included in the Fee)



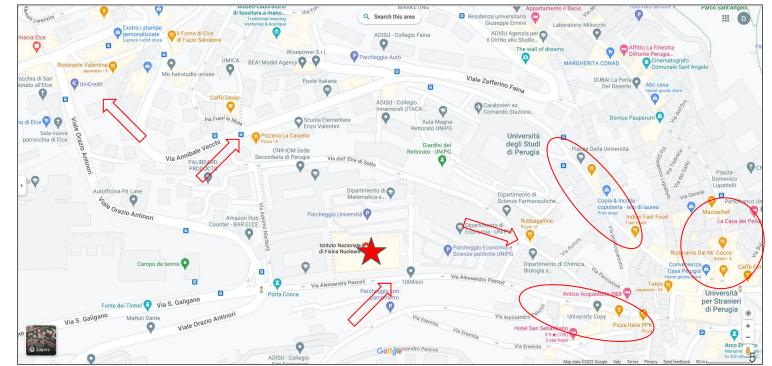
Lunch Breaks are not included in the fee

A Few Hints

Brizi Fiorucci Rubagalline 110 Bar Cafè

Caffè Desio caffè della conca B-GOOD

Pizzeria la casetta LD pizzeria Pizzeria Paciotti Pizza paradiso Napoli pizza e sfizi The break for lunch is 1h and 20 min long (sharp), please come back on time



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Theme and structure of the School

The SOSC 2022 theme is **"Computing Models for Scientific Experiments"**; the school programme is organized in three main tracks:

- 1. Fundamentals -> Monday and Tuesday
- 2. Machine Learning -> Tuesday and Wednesday
- 3. Workflow Management -> Thursday

The school is structured with **lectures in the morning** and **hands-on sessions** (mainly) in the afternoon.

- Tuesday, Wednesday and Thursday (afternoons) there will be slots allocated to the individual project development

Please refer to the <u>SOSC 2022 agenda</u> for details and for the official timetable. All presentations will be uploaded there.

Hands-on: tools

You've been asked to register here:-

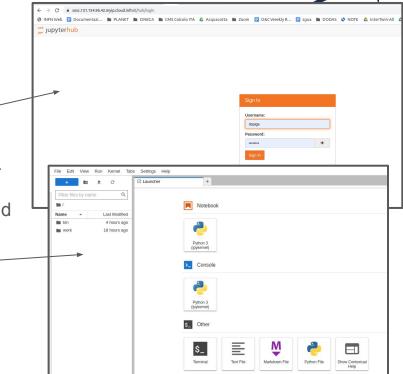
- if you have not done so yet, please tell us and do it asap.

The provided cloud platform has been deployed via INFN-Cloud (for more information here see Davide's introduction). The platform will provide you with

- A Jupyter environment

A Cloud storage service (MinIO)

A Workflow automation service (<u>Argo Workflow</u>)



You will learn how to interact and operate with those services. We'll teach you.. That's part of the Fundamentals

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And of course a **working station** where to do exercises and to connect to the cloud platform

0	user25@infolab02:~
	Search Terminal Help
fault) search	Sourch the Dealers Hill Const
start	Search the Docker Hub for images Start one or more stopped containers
stats	Display a live stream of container(s) resource usage statistics
stop	Stop one or more running containers
tag	Create a tag TARGET IMAGE that refers to SOURCE IMAGE
top	Display the running processes of a container
unpause	Unpause all processes within one or more containers
update version	Update configuration of one or more containers
wait	Show the Docker version information Block until one or more containers stop, then print their exit cod
es	second where one of more containers stop, then print their exit too
Pup Idecker	COMMANDhelp' for more information on a command.
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	olab02:-\$ docker run -i spiga
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How to Login into your terminal

Three steps

- 1. Select SOSC22 working environment
- 2. As user name just insert **userXX** where XX is the workstation number
 - a. i.e at workstation 3 it will be user03
- 3. The password is written in whiteboard.
 - a. same passwd for all the station

Please give it a try and ask if you've any issue. You need it already this morning





Hands-on: Introduction

The hands-on are meant as guided exercises that will treat most of the topics that will be required to develop your individual project. There will be hands-on several topics:

- Software packaging and software management
- Cloud Storage
- Workflow automation
- Dataset handling with Pandas and feature engineering
- Machine Learning (basics)
- Workflow distribution and parallelization



About The individual project

The SOSC22 foresees the development of a personal project.

 Upon successful completion of the project the School will issue an official "SOSC School of Computing Diploma"

The project is structured with Jupyter Notebooks that will include also exercises. While the first part of the notebooks will be guided by tutors, the exercises will be developed just by you.

- On Tue: Data sets exploration and feature engineering
- On Wed: machine learning
- On Thu: workload parallelization and distribution.

The project foresees also bonus tracks for advanced users

NOTE: An attendance certificate will be provided to the students attending the whole School programme



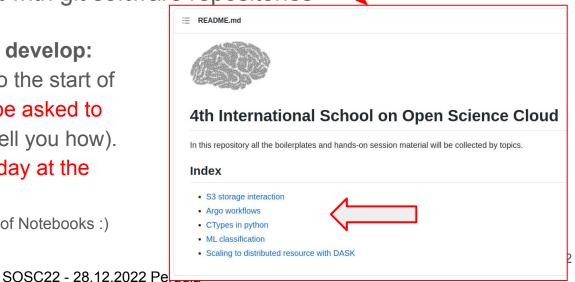
Hands-on and Individual Project: Material

All the material for the guided hands-on as well as the tracks of the individual project will be in form of Jupyter Notebooks. Everything will be made available via the <u>github repo of the SOSC22</u>

- You'll be guided to interact with git software repositories

About the project material you will develop:

- 1. On Wednesday morning (prior to the start of the hands-on session) You will be asked to provide your notebook (we will tell you how).
- 2. The same will happen on Thursday at the end of the day
 - this will be a second and last round of Notebooks :)





During the Closing session on Friday

On Friday we shall have:

- An overall SOSC 2019 evaluation questionnaire.
- The delivery of a **SOSC 2022 certificate to the students attending** the whole school program.
- The delivery of the Official SOSC School of Computing Diploma.
 - For the students successfully completing the project

NOTE: we will keep the cloud platform accessible for a week (9.12.2022). After that, the systems will be destroyed. At the end of the school you should be able to gather all your material, however ask us for any support



Tonight the first event

What: First Special Event: The theme is FPGA

Where: It will be held at T-Trane record store [details in the next slide]

When: Tonight at 19.00 SHARP

The event is organized in two sessions **plus a Buffet**.

19:00	FPGA and Machine Learning: Introduction	Mirko Mariotti
20-00	T-Trane Record Store Borgo XX Giugno, 44, 06126 Perugia PG	19:00 - 20:00
20:00	Buffet	
	T-Trane Record Store Borgo XX Giugno, 44, 06126 Perugia PG	20:00 - 21:00
21:00	Exploting FPGA: Live Demo	Mirko Mariotti
<u>_</u>		
22:00		
22.00		

The second session will be demo-style and can/will start even if the buffet is still running, it is intended for socializing.

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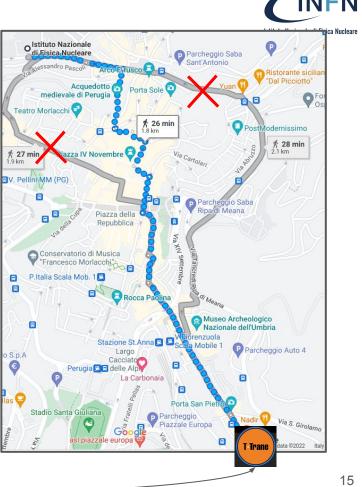
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How to get there



25 minutes from here, Google Maps will help Borgo XX Giugno, 44, 06126 Perugia PG





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Social Dinner

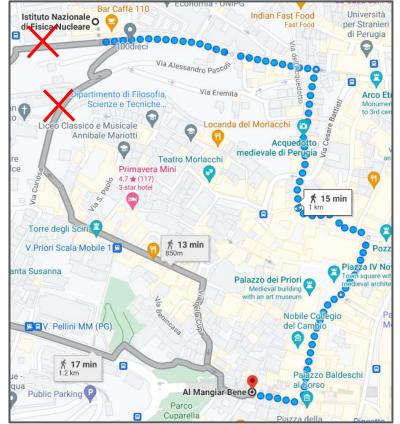
Where: It will be at <u>Ristorante al Mangiar</u> <u>Bene</u>

When: Wednesday 30th at 20.00

- We will meet directly there

How to reach the restaurant: **be careful** with Google Maps :)

Located in Perugia downtown we can only be reached by foot. **Going along Corso P. Vannucci**, in the direction of the **Fontana Maggiore**, immediately after Piazza della Repubblica on the left you will find **Via della Luna** ... a few steps and you have arrived!





Recap

Useful info and links

- 1. Login to the terminal on your desk: **userXX**[station number]. The passwd is on the whiteboard in front of you
- 2. SOSC22 github here: https://github.com/SOSC-School/SOSC22-livesessions
- 3. SOSC22 hands-on **Platform** here:

https://sosc.131.154.96.42.myip.cloud.infn.it/

4. SOSC22 agenda of the school <u>https://web.infn.it/SOSC22</u>

Reach us here https://discord.gg/DpJvJzyd



And now let's start the SOSC22

Welcome again to SOSC 2022

Hope you will have a fruitful week. Enjoy the school and the social events, enjoy Perugia and, of course, do not forget to have fun!

For any further information, see us here, or email the SOSC 2022 Program Committee at <u>sosc22-pc@lists.infn.it</u>

The SOSC 2022 Program Committee:

- → Lucio Anderlini INFN Firenze
- → Daniele Bonacorsi, University of Bologna
- → Diego Ciangottini INFN Perugia
- → Livio Fanò, University of Perugia

- → Mirko Mariotti, University of Perugia
- → Davide Salomoni, INFN CNAF
- → Luca Scrucca, University of Perugia
- → Daniele Spiga, INFN Perugia