

High Performance Bioinformatics - Agenda

December 1-3 / 2021 - CINECA - online course

Teachers

Silvia Gioiosa

Alessandro Grottesi

Balasubramanian Chandramouli

1 December

10:00 - 10:30	Introduction: Big data challenges through HPC (Gioiosa)
10:30 - 11:30	Introduction to CINECA Supercomputing Hardware Architectures and production Environment (Grottesi)
11:30-12:00	Coffee Break
12:00 - 13:00	Introduction to the module environment (Gioiosa)
13:00 - 14:00	Lunch
14:00 - 14:45	The SLURM scheduler (Grottesi)
14:45 - 16:00	Hands-on session – SLURM scheduler (Grottesi - Gioiosa)
16:00 - 16:30	Open questions

2 December

10:00 - 10:45	Introduction to Next Generation Sequencing (Gioiosa)
10:45 - 11:30	Hands-on session: how to build scripts for analyzing RNA-seq data - (Gioiosa)
11:30 - 12:00	Coffee Break
12:00 - 13:00	Hands-on session: how to concatenate scripts with SLURM dependencies - (Gioiosa)
13:00 - 14:00	Lunch
14:00 - 15:30	Hands-on session: how to scale up on multiple samples (Gioiosa)
15:30 - 15:45	Coffee Break
15:45 - 16:45	Hands-on session: Gene expression analysis with a python notebook (Bala)

3 December

10:00 - 11:00	Snakemake Workflow management system (Bala)
11:00 - 11:20	Coffee Break
11:20 - 13:00	Hands-on Snakemake - session 1 (Bala - Gioiosa)
13:00 - 14:00	Lunch
14:00 - 15:30	Hands-on: Snakemake - session 2 (Bala - Gioiosa)
15:30 - 15:45	Coffee Break
15:45 - 16:30	Hands-on: Snakemake - session 3 (Bala - Gioiosa)