Programming paradigms for HPC

An introduction to parallel and distributed programming

Teacher: Daniela Loreti, DISI, University of Bologna (email: daniela.loreti@unibo.it)

Schedule:
- May 17th, 2023, h. 14.30-17.00. Room 5.1
- May 24th, 2023, h. 14.30-17.00. Room 5.1
- May 31st, 2023, h. 14.30-17.00. Room 5.1
- June 7th, 2023, h. 14.30-17.00. Room 5.1

Duration: 10 hours

Location: Viale Risorgimento 2 – Room 5.1

Overview

The course will provide an introduction to the main techniques to manage the complexity of High-Performance Computing infrastructures while taking advantage of their great computing power.

Topics:
- Introduction to HPC computing: architectural principals and classical programming paradigms: message passing and shared memory
- Introduction to GPU: architectures and programming principles
- Introduction to distributed data processing frameworks and stream processing
- Current challenges and research directions

How to participate?
Please fill the google form to participate.

Learning and assessment
The course will be taught in English. The teacher will provide the slides and bibliographical references. All course material is in English.
The final assessment can consist of a short technical report on a paper related to the course topics.