High-Performance Computing

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In this course we will develop basic skills for working on remote servers, by developing parallel software using the most important ***parallel programming paradigms***: multi-threading, OpenMP, MPI, and CUDA. These skills will be applied on the Capri HPC infrastructure, along with an introduction to other useful concepts such as containers, version control, and job scheduling.

Topics

- High performance computing
- Capri HPC infrastructure
- Job scheduling using Slurm
- Containers using Singularity
- Version control using `git`
- Parallel architectures
- Parallel programming frameworks using different languages (C/C++ and Python)