



Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

High-Performance Computing Lab for CSE

2024

Student: FULL NAME

Discussed with: FULL NAME

Solution for Project 4

Due date: Monday 29 April 2024, 23:59 (midnight).

HPC Lab for CSE 2024 — Submission Instructions
(Please, notice that following instructions are mandatory:
submissions that don't comply with, won't be considered)

- Assignments must be submitted to Moodle (i.e. in electronic format).
- Provide both executable package and sources (e.g. C/C++ files, Matlab). If you are using libraries, please add them in the file. Sources must be organized in directories called:
Project_number_lastname_firstname
and the file must be called:
project_number_lastname_firstname.zip
project_number_lastname_firstname.pdf
- The TAs will grade your project by reviewing your project write-up, and looking at the implementation you attempted, and benchmarking your code's performance.
- You are allowed to discuss all questions with anyone you like; however: (i) your submission must list anyone you discussed problems with and (ii) you must write up your submission independently.

1. Ring sum using MPI [10 Points]

2. Cartesian domain decomposition and ghost cells exchange [20 Points]

3. Parallelizing the Mandelbrot set using MPI [30 Points]

4. Parallel matrix-vector multiplication and the power method [40 Points]