
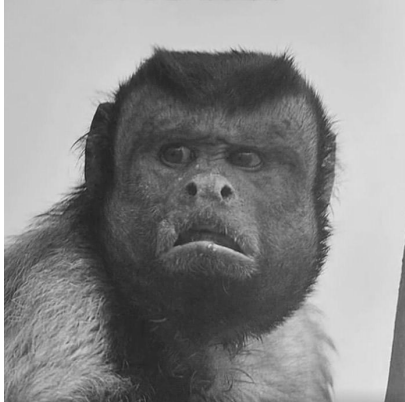


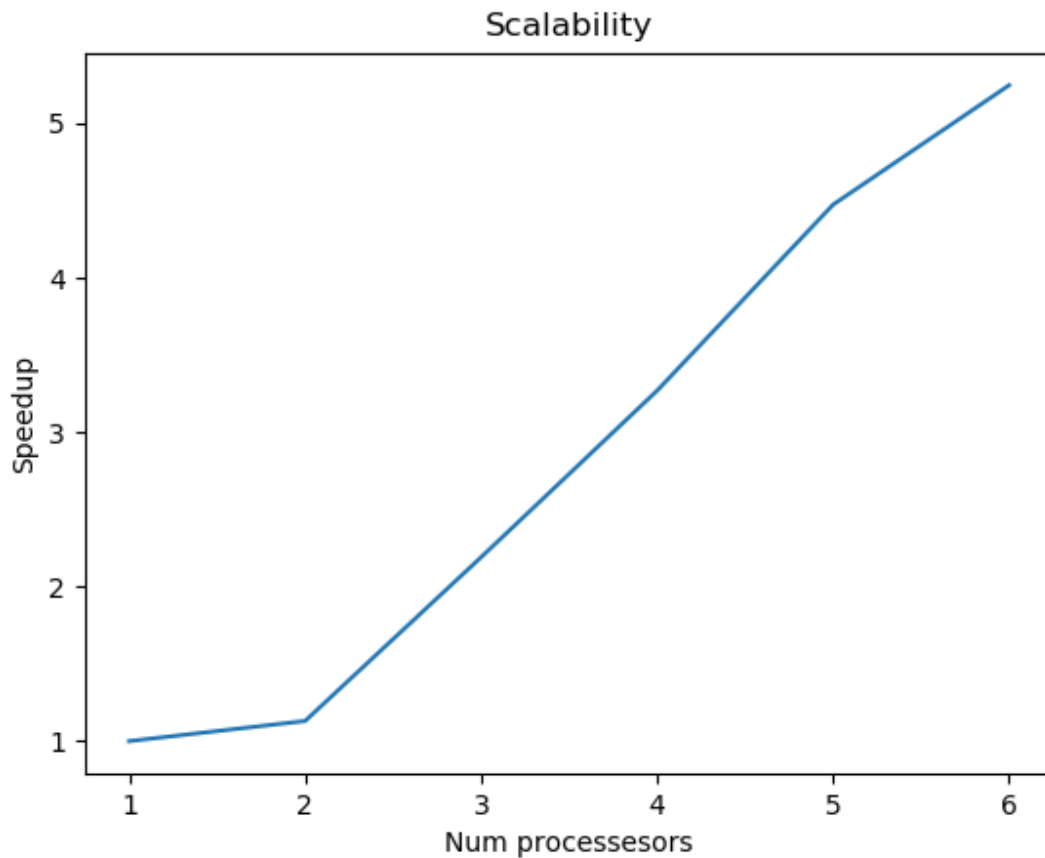
MPI Color to Gray Report

- **Objective:**
The objective of this project is to use MPI to convert an image from color to grayscale using a varying number of processes. This is done using two MPI communication protocols: MPI.scatter and MPI.gather. From there the master process writes the grayscale image to a file named 'gray.jpeg.' I used the Python MPI module mpi4py for this assignment, with permission from Professor Wang. An email screenshot confirming this is below my scalability plot.

- **Results**

Number of processes	Execution time (seconds)
1 (serial)	4.25
2	3.76
3	1.94
4	1.30
5	0.95
6	0.81

Original image	Converted image
	



MPI Python



Xiaoqiang Wang <wangxiaoqiang@gmail.com>

Mon 2/28/2022 10:12 AM

To: Abelardo Riojas

Good morning, Abelardo,

You can try MPI with Python. But if you can not complete the homework in python, I will not able to help you. So you are risking something unknown.

If you take this risk, I am fine with it.

At the beginning of this course, I emphasized the importance of knowing C/C++. The TA and I can always help you if you get into trouble.

Also, we are just in the middle of this course, and it will become more and more difficult as we come into the coding of Cuda, which also requires C/C++ coding.

Please evaluate your situation. This course actually does not need C++, C is enough. There are many tutorials for C online. Reviewing C may help you a lot in doing the homework. And it may only take several hours. This might be an easier way instead of Python.

Best,
Xiaoqiang

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