

Lecture 22: Intro to GPUs

CMSE 822: Parallel Computing
Prof. Sean M. Couch



Today's Plan

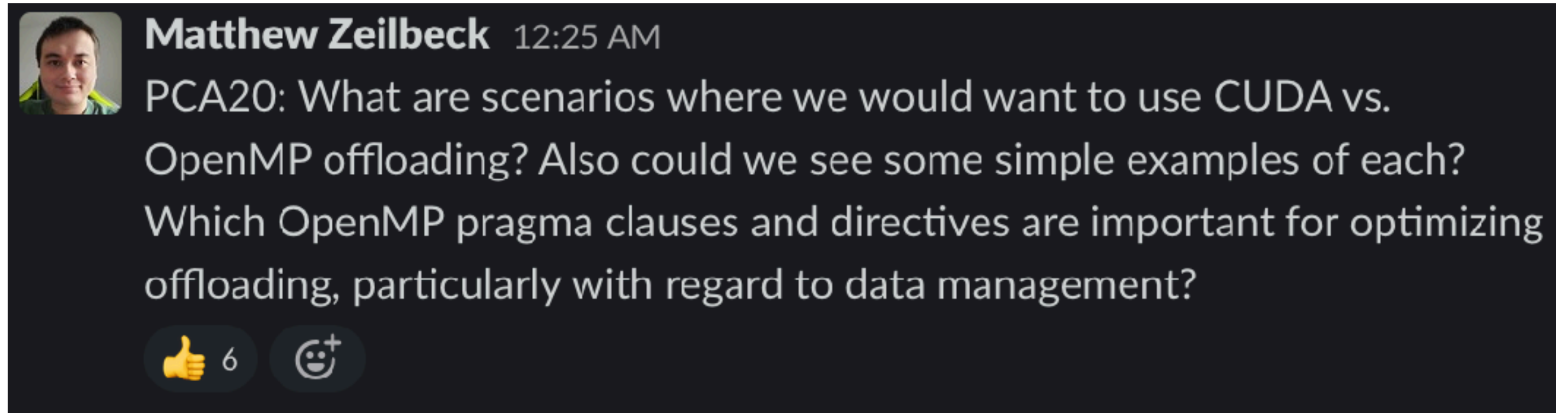
- Fill out the Project Spreadsheet [here](#) (see #general channel).
- Questions
- Group work on projects
- Break!

Puppy time!





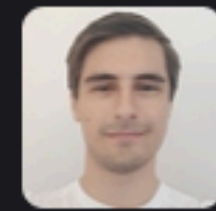
PCA Questions



- In general, CUDA will give better performance but at the cost of portability



PCA Questions



Jason Gombas 10:00 AM

PCA20: Hopefully not too naive question, but what are the main differences between GPUs found in Nvidia graphics cards for commercial use versus GPUs found in HPC centers?



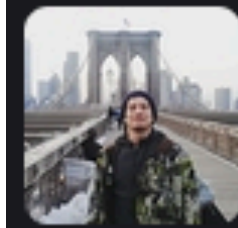
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- GPGPUs optimized for floating point (single AND double precision)
- GPGPUs have much better memory bandwidth (big deal for scientific computing)



PCA Questions



Andrés Galindo 10:04 AM

PCA20: Is there some way to implement "Latency in hiding" when the GPU is being used maybe the CPU can make some computations.

?

- Yes! Critical in some applications.
- Task-based approach helpful

Project work!