Parallelism Jeopardy

Putting it all together!

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Suppose We Have This Setup

Network

CPU

Memory

Core

SSE

Core

SSE

Core

SSE

GPU
Welcome to Parallelism Jeopardy!

IN A MULTI-CPU DISTRIBUTED SYSTEM, THIS IS THE TOTAL NUMBER OF DIFFERENT KINDS OF PARALLELISMS THAT WE CAN COMBINE

I’ll take CS 475/575 for $800, Alex.

1. Multicore OpenMP
1. Multicore OpenMP
2. CPU SIMD

1. Multicore OpenMP
2. CPU SIMD
3. GPU
What is “4”, Alex?
This is how modern supercomputers work!
And, over the last 10 weeks, you have learned about using all 4 – congratulations!

1. Multicore OpenMP
2. CPU SIMD
3. GPU
4. MPI

and, they can all be active within the same application!

This is how modern supercomputers work!

The Texas Advanced Computing Center’s new Frontera supercomputer, currently the 5th fastest in the world