Parallelism Jeopardy

Putting it all together!

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Suppose We Have This Setup

<table>
<thead>
<tr>
<th>Memory</th>
<th>Memory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core</td>
<td>Core</td>
</tr>
<tr>
<td>SSE</td>
<td>SSE</td>
</tr>
<tr>
<td>Core</td>
<td>Core</td>
</tr>
<tr>
<td>SSE</td>
<td>SSE</td>
</tr>
<tr>
<td>CPU</td>
<td>CPU</td>
</tr>
<tr>
<td>GPU</td>
<td>GPU</td>
</tr>
</tbody>
</table>

Suppose We Have This Setup

Network
Welcome to Parallelism Jeopardy!

I’ll take CS 475/575 for $800, Alex.

IN A MULTI-CPU DISTRIBUTED SYSTEM, THIS IS THE TOTAL NUMBER OF DIFFERENT KINDS OF PARALLELISMS THAT WE CAN COMBINE
1. Multicore OpenMP
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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 5\(^{th}\) fastest in the world.