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Elevating Performance through GPU Parallelism

Thursday 8 May 2025 09:00 (1 hour)

As modern applications demand higher performance and richer visual experiences, GPUs have emerged as powerful tools for both rendering graphics and executing parallel computations.

This presentation explores the realm of GPU computing, highlighting its multiple functions, including applications in graphics rendering, machine learning, and general-purpose GPU (GPGPU) computing.
We'll provide an introduction to GPU architecture and walk through shader programming, demonstrating how APIs like CUDA and Metal unlock the full potential of modern graphics processors.

Through a simulation, you'll witness how shaders can significantly boost parallel performance, leading to higher frame rates and greater responsiveness compared to traditional CPU implementations.

We will also compare these GPU-accelerated solutions with CPU-based approaches, highlighting the remarkable performance improvements that GPUs bring to computational tasks.

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