

Are graphics processors the new supercomputers?

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This talk will be a broad overview of graphics processing unit (GPU) architectures. Generally GPU systems have shown remarkable performance gains, consistently faster than Moore's law (doubling in less than one year). We will illustrate how designing a GPU is fundamentally different from design of CPU processors; There are different design goals and different trade offs are allowed. As an example of a graphics chip we will describe some of the details of the X2900 desktop processor. There will also be a quick introduction to CTM (close-to-the-metal), a novel software system for general data level parallel computing on GPU architectures. Finally we show how changes within only a year have drastically effected the way a GPU pseudo random number generator is coded.