

## Invited Talk

NVIDIA CUDA Software and GPU Parallel Computing Architecture

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### Abstract

In the past, graphics processors were special purpose hardwired application accelerators, suitable only for conventional rasterization-style graphics applications. Modern GPUs are now fully programmable, massively parallel floating point processors. This talk will describe NVIDIA's massively multithreaded computing architecture and CUDA software for GPU computing. The architecture is a scalable, highly parallel architecture that delivers high throughput for data-intensive processing. Although not truly general-purpose processors, GPUs can now be used for a wide variety of compute-intensive applications beyond graphics.

### Bio

David Kirk has been NVIDIA's Chief Scientist since January 1997. His contribution includes leading NVIDIA graphics technology development for today's most popular consumer entertainment platforms. In 2007, Dr. Kirk was elected to the National Academy of Engineering (NAE) for his role in bringing high-performance graphics to personal computers. Election to the NAE is among the highest professional distinctions awarded in engineering. In 2002, Dr. Kirk received the SIGGRAPH Computer Graphics Achievement Award for his role in bringing high-performance computer graphics systems to the mass market. From 1993 to 1996, Dr. Kirk was Chief Scientist, Head of Technology for Crystal Dynamics, a video game manufacturing company. From 1989 to 1991, Dr. Kirk was an engineer for the Apollo Systems Division of Hewlett-Packard Company. Dr. Kirk is the inventor of 50 patents and patent applications relating to graphics design and has published more than 50 articles on graphics technology. Dr. Kirk holds B.S. and M.S. degrees in Mechanical Engineering from the Massachusetts Institute of Technology and M.S. and Ph.D. degrees in Computer Science from the California Institute of Technology.