Trends in Data-Centric and Heterogeneous Systems

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Abstract:

This talk starts with some observations about trends in Big Data Systems and more generally in Data-Centric Systems. We point out how a number of these trends are bringing the different types of Data-Centric Systems closer together and we point out some opportunities for further unification. Next we show how some of these systems can be realized and further improved with technologies recently brought together in the OpenPOWER foundation. Specific examples will include improved compression, text and image analytics acceleration, and a method for user-level access to flash leveraging the OpenPOWER coherent accelerator processor interface.

About the Speaker:

Dr. Peter Hofstee currently works at the IBM Austin Research Laboratory on workload-optimized and hybrid systems. Peter has degrees in theoretical physics (MS, Rijks Universiteit Groningen, Netherlands) and computer science (PhD, California Inst. of Technology). At IBM Peter has worked on microprocessors, including the first CMOS processor to demonstrate GHz operation (1997), and he was the chief architect of the synergistic processor elements in the Cell Broadband Engine, known from its use in the Sony Playstation 3 and the Roadrunner supercomputer that first broke the 1 Petaflop Linpack benchmark. His interests include VLSI, multicore and heterogeneous microprocessor architecture, security, system design and programming. Peter has over 100 patents. Peter was also recently appointed as a professor (part time) at Delft University.