Doing FPGA in a Former Software Company

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Abstract

Microsoft has gone through massive changes in the last few years. First, it was the dominant software company. Then, it became a "Devices and Services" company, and now it is "Mobile First, Cloud First". Of course, deep down in the bones, it is still a software company. In this talk, I will give a personal account on how FPGA acceleration gradually gained traction inside Microsoft, difficulties and lessons learned in getting acceptance, FPGA's apparently imminent deployment inside Microsoft data centers, and finally what may be needed in FPGA programming software tool developments for wider acceptance inside a company like Microsoft.

FENG-HSIUNG HSU is the research manager for Hardware Computing Group at Microsoft Research Asia. Prior to Microsoft, he had worked at IBM's T. J. Watson Research Center, Compaq's Western Research Lab, and HP's Research Lab. He received his Ph. D. in Computer Science from Carnegie Mellon University in 1989 and B. S. in Electrical Engineering from National Taiwan University in 1980. He is sometimes known by his nick name "CB", which stands for "Crazy Bird". CB's research interests include VLSI design, special purpose algorithms, machine learning, device physics, optics, FPGA systems, computer architecture, mobile systems, 3D imaging systems, human-computer interface, and "whatever makes sense". Recently, he has been known to dabble in keyboard design, among other things. CB received ACM's Grace Murray Hopper Award for his work at Carnegie Mellon on Deep Thought, the first chess machine to play chess at Grandmaster level. To the best of his knowledge, Deep Thought was also the first chess machine to use FPGAs (as part of the evaluation function). In 1997, CB won the Fredkin Prize, along with Murray Scott Campbell and Arthur Joseph Hoane, for Deep Blue's defeating the World Chess Champion (Gary Kasparov) in a set match. CB served as the chip designer and system architect for Deep Blue. CB is the author of the book, "Behind Deep Blue: Building the Computer that Defeated the World Chess Champion".