北京大学海外名家讲学计划

LOOKING BACK, PROJECTING FORWARD

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中关新园1号楼观湖厅

ABSTRACT: The first half of the talk will list lessons learned during the design of the Arithmetic Cube, a VLSI design project that took place in the mid 1980's - when CMOS was the new technology - to the early 1990's. Design tools that were developed in support of the Arithmetic Cube will also be briefly described. A key lesson learned during this period was "Let the needs of the design drive the design tool development." In this way, the tools that are developed will be much more likely to be used by designers. The second half of the talk will project forward in the emerging technology space (beyond Moore's Law) to see how the lessons learned during the design of the Arithmetic Cube can help guide design and design tools research and development in the future.

BIOGRAPHY: Mary Jane Irwin has been on the faculty at Penn State since 1977 where she currently holds the title of Evan Pugh Professor and A. Robert Noll Chair in Engineering in the Department of Computer Science and Engineering. Her research and teaching interests include computer architecture, embedded and high performance computing systems design, power and reliability aware design, and emerging technologies in computing systems. Dr. Irwin received her Ph.D. from the University of Illinois in 1977 and an Honorary Doctorate from Chalmers University, Sweden, in 1997. She was named a Fellow of The Institute of Electrical and Electronic Engineers (IEEE) in 1995, a Fellow of The Association for Computing Machinery (ACM) in 1996, and was elected to the National Academy of Engineering in 2003 and to the American Academy of Arts and Sciences in 2009.

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