

# *Effective Resource Management Towards Efficient Computing*

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*Abstract*— Improving performance of computers at historical rates, as dictated by Moore's Law, is becoming increasingly more challenging especially because we are hitting the chip power-budget wall. But challenges usually direct us to focus on opportunities we have neglected in the past. I will focus on some of these overlooked opportunities in this talk. One such opportunity is to question what are meaningful performance goals for individual applications. I will present a resource management framework in which architectural resources are assigned to applications based on their performance requirements. The talk also covers some innovations that enable us to compute more power-efficiently by using memory resources more effectively by, for example, exploiting value locality.

*Bio*— Per Stenstrom is a professor at Chalmers University of Technology. His research interests are in parallel computer architecture. He has authored or co-authored three textbooks and more than 150 publications in this area. He has been program chairman of the IEEE/ACM Symposium on Computer Architecture, the IEEE High-Performance Computer Architecture Symposium, and the IEEE Parallel and Distributed Processing Symposium and acts as Senior Editor of ACM TACO and Associate Editor-in-Chief of JPDC. He is a Fellow of the ACM and the IEEE and a member of Academia Europaea, the Royal Swedish Academy of Engineering Sciences, and the Royal Spanish Academy of Engineering.