

COMPUTER SCIENCE COLLOQUIUM

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The case for simplicity-effective design

ABSTRACT

Complexity-effective design has become an approach with a growing following. While this approach leads to useful design metrics to quantify trade-offs, it also implies that there is value in introducing complexity. This talk argues for occasional re-evaluations of fundamentals with a simplicity-effective design mindset -- one in which the simplest approach to achieving performance goals is sought. By way of example, I examine two alternative approaches to partially reconfigurable multicore designs, which illustrate how the simplicity-effective mindset can lead to new approaches -- by contrast with the incremental approach which has failed to maintain the lead RISC processors once had over CISC designs.