



Multicore Systems On-Chip: Practical Software/Hardware Design (Hardback)

By Abderazek Ben Abdallah

Atlantis Press (Zeger Karssen), Netherlands, 2013. Hardback. Condition: New. 2nd Revised edition. Language: English . Brand New Book ***** Print on Demand *****. System on chips designs have evolved from fairly simple uncore, single memory designs to complex heterogeneous multicore SoC architectures consisting of a large number of IP blocks on the same silicon. To meet high computational demands posed by latest consumer electronic devices, most current systems are based on such paradigm, which represents a real revolution in many aspects in computing. The attraction of multicore processing for power reduction is compelling. By splitting a set of tasks among multiple processor cores, the operating frequency necessary for each core can be reduced, allowing to reduce the voltage on each core. Because dynamic power is proportional to the frequency and to the square of the voltage, we get a big gain, even though we may have more cores running. As more and more cores are integrated into these designs to share the ever increasing processing load, the main challenges lie in efficient memory hierarchy, scalable system interconnect, new programming paradigms, and efficient integration methodology for connecting such heterogeneous cores into a single system capable of leveraging their individual flexibility. Current...



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