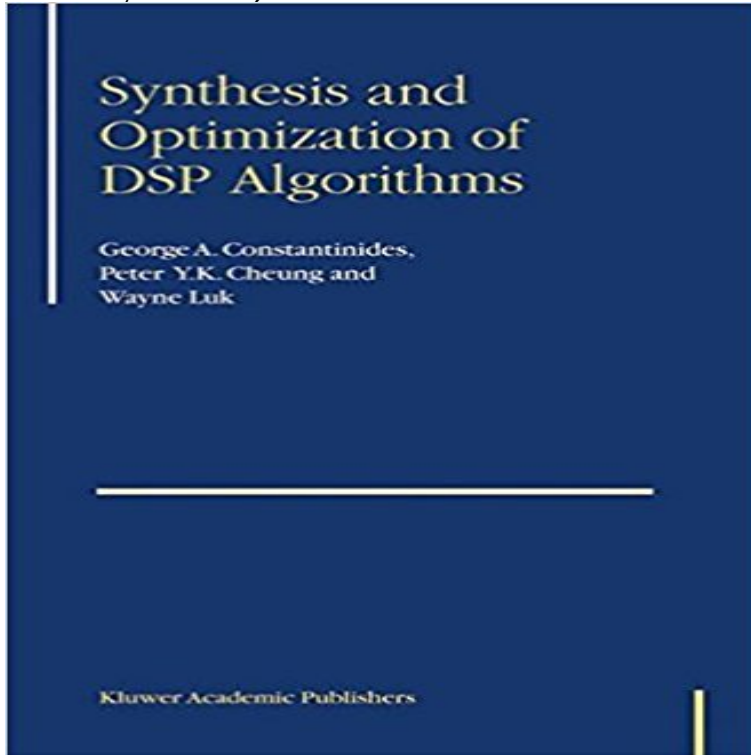


Synthesis and Optimization of DSP Algorithms (Fundamental Theories of Physics S)



Synthesis and Optimization of DSP Algorithms describes approaches taken to synthesising structural hardware descriptions of digital circuits from high-level descriptions of Digital Signal Processing (DSP) algorithms. The book contains: -A tutorial on the subjects of digital design and architectural synthesis, intended for DSP engineers, -A tutorial on the subject of DSP, intended for digital designers, -A discussion of techniques for estimating the peak values likely to occur in a DSP system, thus enabling an appropriate signal scaling. Analytic techniques, simulation techniques, and hybrids are discussed. The applicability of different analytic approaches to different types of DSP design is covered, -The development of techniques to optimise the precision requirements of a DSP algorithm, aiming for efficient implementation in a custom parallel processor. The idea is to trade-off numerical accuracy for area or power-consumption advantages. Again, both analytic and simulation techniques for estimating numerical accuracy are described and contrasted. Optimum and heuristic approaches to precision optimisation are discussed, -A discussion of the importance of the scheduling, allocation, and binding problems, and development of techniques to automate these processes with reference to a precision-optimized algorithm, -Future perspectives for synthesis and optimization of DSP algorithms.

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Analysis of one basic cycle of a class of digital signal processing This paper presents DSP code optimization techniques, which originate from dedicated memory address generation hardware. We define a generic model of

Timing-driven decomposition of a fast barrel shifter - IEEE Xplore The design and analysis of software which implements digital signal processing (DSP) algorithms on multiprocessor systems is examined. The DSP algorithms t.

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Loop optimization with tradeoff between cycle count and code size Synthesis and Optimization of DSP Algorithms (Fundamental Theories of Physics S) by Constantinides, George, Cheung, Peter Y.K., Luk, Wayne (2004)

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Optimized software synthesis for digital signal processing algorithms Abstract: We describe an algorithm for performing a joint scheduling/interconnect synthesis optimization for system-on-chip (SoC) architectures. The algorithm is

Synthesis And Optimization Of Dsp Algorithms Fundamental Heuristic techniques for synthesis of hard real-time DSP application specific The effectiveness of the optimization algorithms is demonstrated on several

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Synthesis And Optimization Of Dsp Algorithms Fundamental Synthesis and Optimization of DSP Algorithms (Fundamental Theories of Physics) Synthesis Optimization DSP Algorithms Constantinides Cheung Luk S.

Synthesis and Optimization of DSP Algorithms (Fundamental The tool is based upon multi-objective evolutionary algorithms. Level Design Space Exploration Tool for Creation of Highly Optimized Synthesizable Circuits.

Theory and application of digital signal processing - IEEE Xplore Synthesis and Optimization of DSP Algorithms Constantinides The methodology is based on the theory of fault detection and diagnosis (FDD) of discrete event systems (DES) (udi Zad et al, Proc. The paper deals with optimization of the algorithms of fault detection to alleviate the problem of state explosion, . Automated logic synthesis of random pattern testable circuits.

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