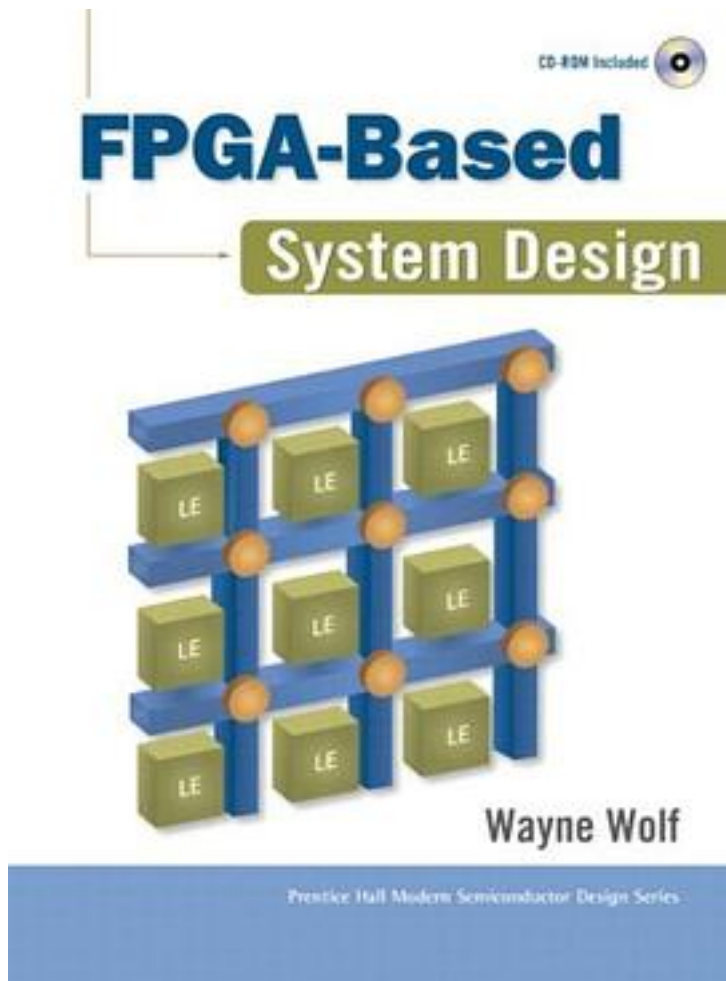# FPGA-Based System Design

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著者:Wayne Wolf

出版者:Prentice Hall

出版时间:2004-6-25

装帧:Paperback

isbn:9780137033485

Everything FPGA designers need to know about FPGAs and VLSI Digital designs once built in custom silicon are increasingly implemented in field programmable gate arrays

(FPGAs). Effective FPGA system design requires a strong understanding of VLSI issues and constraints, and an understanding of the latest FPGA-specific techniques. In this book, Princeton University's Wayne Wolf covers everything FPGA designers need to know about all these topics: both the "how" and the "why." Wolf begins by introducing the essentials of VLSI: fabrication, circuits, interconnects, combinational and sequential logic design, system architectures, and more. Next, he demonstrates how to reflect this VLSI knowledge in a state-of-the-art design methodology that leverages FPGA's most valuable characteristics while mitigating its limitations. Coverage includes: * How VLSI characteristics affect FPGAs and FPGA-based logic design * How classical logic design techniques relate to FPGA-based logic design * Understanding FPGA fabrics: the basic programmable structures of FPGAs * Specifying and optimizing logic to address size, speed, and power consumption * Verilog, VHDL, and software tools for optimizing logic and designs * The structure of large digital systems, including register-transfer design methodology * Building large-scale platform and multi-FPGA systems * A start-to-finish DSP case study addressing a wide range of design problems PRENTICE HALL Professional Technical Reference Upper Saddle River, NJ 07458 www.phptr.com ISBN: 0-13-142461-0

作者介绍:

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评论

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书评

这是一本基础书，其独到之处在于详细介绍 FPGA 和 system
design的同时，还介绍了VLSI 的相关技术基础。 特色1:
作者花了很大一部分笔墨来介绍 VLSI
的技术基础，对于之前没有模拟/数字电路基础的人来说（比如从软件转向硬件，或者
需要使用 FPGA 的软件开发人员），这部分内...

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