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Algorithms For VLSI Design Automation

Synopsis

Modern microprocessors such as Intel's Pentium chip typically contain millions of transitors. Known generically as Very Large-Scale Integrated (VLSI) systems, the chips have a scale and complexity that has necessitated the development of CAD tools to automate their design. This book focuses on the algorithms which are the building blocks of the design automation software which generates the layout of VLSI circuits. One of the first books on the subject, this guide covers all stages of design.

Book Information

Hardcover: 340 pages

Publisher: Wiley; 1 edition (December 22, 1998)

Language: English

ISBN-10: 0471984892

ISBN-13: 978-0471984894

Product Dimensions: 6.9 x 1 x 10 inches

Shipping Weight: 1.4 pounds (View shipping rates and policies)

Average Customer Review: 4.6 out of 5 stars   3 customer reviews

Best Sellers Rank: #1,032,651 in Books (See Top 100 in Books)   #42 inÃ Â Books > Engineering & Transportation > Engineering > Electrical & Electronics > Circuits > VLSI & ULSI   #324 inÃ Â Books > Engineering & Transportation > Engineering > Electrical & Electronics > Circuits > Design   #3141 inÃ Â Books > Engineering & Transportation > Engineering > Telecommunications & Sensors

Customer Reviews

Very large scale integrated (VLSI) circuits nowadays contain many millions of components, and cannot be designed without the aid of design automation tools. This book provides an insight into the algorithms used inside these computer-aided design (CAD) tools, and will be a good starting point for designers who want to specialize in building CAD tools themselves. Highlights of the book include: * Special attention to background knowledge from mathematics and computer science: graph theory, complexity of algorithms, and general-purpose methods for combinatorial optimization * About 50 algorithms (from graph theory, layout design, simulation, logic synthesis and high-level synthesis) presented in depth by means of pseudo-code and step-by-step examples It will be an ideal text for students in Computer Science or Electronic Engineering taking VLSI design automation courses, and for chip designers or programmers in industry developing CAD tools.

The author, Sabih Gerez, has based the book on a course given to his students at the University of Twente, Enschede, in the Netherlands. As an assistant professor at the Department of Electrical Engineering, he teaches courses on circuit theory and VLSI design. His research focuses on VLSI design automation, especially high-level synthesis. Dr Gerez holds an M.Sc. degree (with honors) in Electrical Engineering and a Ph.D. degree in Applied Sciences, both from the University of Twente.

Good

A good place to review electronic design automation fundamentals. Real interesting thing to see in this book is how modeling aspect changes given the steps in the VLSI flow. THE ONLY BOOK, I KNOW ON THIS TOPIC.

This is a good book for anyone interested in learning about VLSI-related algorithms. I found the explanations easy to understand and have been able to successfully apply the algorithms in other domains.

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