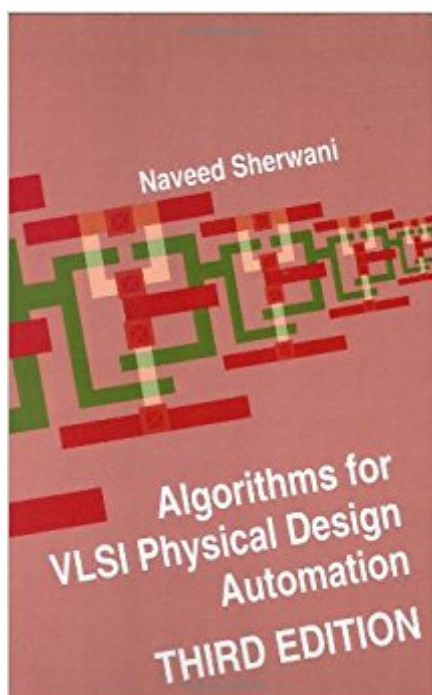


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# Algorithms For VLSI Physical Design Automation



## **Synopsis**

Algorithms for VLSI Physical Design Automation, Third Edition covers all aspects of physical design. The book is a core reference for graduate students and CAD professionals. For students, concepts and algorithms are presented in an intuitive manner. For CAD professionals, the material presents a balance of theory and practice. An extensive bibliography is provided which is useful for finding advanced material on a topic. At the end of each chapter, exercises are provided, which range in complexity from simple to research level. Algorithms for VLSI Physical Design Automation, Third Edition provides a comprehensive background in the principles and algorithms of VLSI physical design. The goal of this book is to serve as a basis for the development of introductory-level graduate courses in VLSI physical design automation. It provides self-contained material for teaching and learning algorithms of physical design. All algorithms which are considered basic have been included, and are presented in an intuitive manner. Yet, at the same time, enough detail is provided so that readers can actually implement the algorithms given in the text and use them. The first three chapters provide the background material, while the focus of each chapter of the rest of the book is on each phase of the physical design cycle. In addition, newer topics such as physical design automation of FPGAs and MCMs have been included. The basic purpose of the third edition is to investigate the new challenges presented by interconnect and process innovations. In 1995 when the second edition of this book was prepared, a six-layer process and 15 million transistor microprocessors were in advanced stages of design. In 1998, six metal process and 20 million transistor designs are in production. Two new chapters have been added and new material has been included in almost all other chapters. A new chapter on process innovation and its impact on physical design has been added. Another focus of the third edition is to promote use of the Internet as a resource, so wherever possible URLs have been provided for further investigation. Algorithms for VLSI Physical Design Automation, Third Edition is an important core reference work for professionals as well as an advanced level textbook for students.

## **Book Information**

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## Customer Reviews

I found this book very helpful when working on my dissertation. It provides a great overview of the algorithms and approaches used in VLSI CAD, many of which can be extended to the FPGA CAD work I was doing. Other reviewers have commented that they sometimes referred to the original papers cited. I too did that when I wanted more information, but still found this book to be great as a reference and starting point.

I read the Chapter on clock routing and found that the author did not do a good job on explaining about DME algorithm. I got more confused after reading it. So, I went to the library and checked the references which gave me clear understanding. Usually, a book should give a reader with a very clear example about the algorithm it presents. It's was not the case for the DME algorithm.

I found this book very helpful in gaining a deeper understanding of what the tools I use are doing. Also, the terminology that is used and explained allows me to easier communication with the CAD developers. I found the information relating to clock skew and jitter of particular value to my daily work.

This book is good at introducing basic concepts, if this is what you want to know. But it is really bad to introduce algorithm. It simply confuse you. Many time I don't know what the author is talking about and have to find the original paper, which is much clear.

Very comprehensive in VLSI physical design automation. People who major in Computer Science and want to study in VLSI is suitable to buy this book. Also people who want to develop EDA tools can buy the book.

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