

Engineering Optimization : Theory and Practice , Third Edition , Singiresu S. Rao, Hohn and Wiley, 605 Third Avenue, New York, NY 10158, 1996 , 903 pp. \$79.95

This book covers mostly the traditional mathematical programming techniques in engineering applications. The techniques covered includes linear and nonlinear programming, geometric programming, dynamic programming, integer programming, stochastic programming as well as some of recent topics in genetic algorithm, simulated annealing, Neural network and fuzzy optimization techniques.

Although the book presented as a textbook which includes examples, chapter references review questions and problems, it can also serve as a professional references as an engineering optimization techniques resource.

As the author stated, the purpose of this book is to present the techniques and applications of engineering optimization in a simple manner. To be benefit from this 903 pages book, it requires the reader equipped with some understanding in advanced calculus and linear algebra.

As a textbook, I would say the author is successfully introducing the vast amount of mathematical programming topics in an organized and straightforward style. However, in order to achieve this purpose, some depth of the topics may be sacrificed. Especially, in chapter 12, Further topics in optimization , it covers ten most recent techniques, but without much of the elaboration of the topic covered. In Neural-Network based optimization, the professional engineer may have to find the working knowledge from other sources.

I would recommend this book as a graduate level textbook for engineering optimization course, or as a professional engineer's reference in the optimization techniques. However, some most recent topics in optimization are inadequately covered, also the author acknowledged in the beginning of the book that the optimization techniques in statistical or stochastic nature is not included, thus the reader has to find it from the other sources.

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Leighann Klaus
Book Review, ASQC

August 2, 1996

Dear Leighann:

I have completed the book review on "Engineering Optimization" by Rao. If you have any new list of books to be reviewed, I would like to continue receiving it. Any question regarding to this review please call me.

Sincerely,

Shin Ta Liu