Engineering Optimization. Methods and Applications. 2nd Edition

Description:

The classic introduction to engineering optimization theory and practice—now expanded and updated. Engineering optimization helps engineers zero in on the most effective, efficient solutions to problems. This text provides a practical, real-world understanding of engineering optimization. Rather than belaboring underlying proofs and mathematical derivations, it emphasizes optimization methodology, focusing on techniques and strategies relevant to engineering applications in design, operations, and analysis. It surveys diverse optimization methods, ranging from those applicable to the minimization of a single-variable function to those most suitable for large-scale, nonlinear constrained problems. New material covered includes the duality theory, interior point methods for solving LP problems, the generalized Lagrange multiplier method and generalization of convex functions, and goal programming for solving multi-objective optimization problems. A practical, hands-on reference and text, Engineering Optimization, Second Edition covers:

- Practical issues, such as model formulation, implementation, starting point generation, and more
- Current, state-of-the-art optimization software
- Three engineering case studies plus numerous examples from chemical, industrial, and mechanical engineering
- Both classical methods and new techniques, such as successive quadratic programming, interior point methods, and goal programming

Excellent for self-study and as a reference for engineering professionals, this Second Edition is also ideal for senior and graduate courses on engineering optimization, including television and online instruction, as well as for in-plant training.

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