

## Nonlinear programming

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### Abstrak

separation theorems are then derived based on these theorems. This is followed by a chapter on convex functions that includes theorems of the alternative for such functions. These results are used in obtaining the saddlepoint optimality conditions of nonlinear programming without differentiability assumptions.

Properties of differentiable convex functions are derived and then used in two key chapters of the book, one on optimality conditions for differentiable nonlinear programs and one on duality in nonlinear programming. Generalizations of convex functions to pseudoconvex and quasiconvex functions are given and then used to obtain generalized optimality conditions and duality results in the presence of nonlinear equality constraints.

The book has four useful self-contained appendices on vectors and matrices, topological properties of  $n$ -dimensional real space, continuity and minimization, and differentiable functions.