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   Sommario/riassunto   The aim of this book was to collect the most recent methods developed for NSO and its practical applications. The book contains seven papers: The first is the foreword by the Guest Editors giving a brief review of NSO and its real-life applications and acknowledging the outstanding contributions of Professor Adil Bagirov to both the theoretical and practical aspects of NSO. The second paper introduces a new and very efficient algorithm for solving uncertain unit-commitment (UC) problems. The third paper proposes a new nonsmooth version of the generalized damped Gauss-Newton method for solving nonlinear complementarity problems. In the fourth paper, the abs-linear representation of piecewise linear functions is extended to yield simultaneously their DC decomposition as well as the pair of generalized gradients. The fifth paper presents the use of biased-randomized algorithms as an effective methodology to cope with NP-hard and nonsmooth optimization problems in many practical applications. In the sixth paper, a problem concerning the scheduling of nuclear waste disposal is modeled as a nonsmooth multiobjective mixed-integer nonlinear optimization problem, and a novel method using the two-slope parameterized achievement scalarizing functions is introduced. Finally, the last paper considers binary classification of a multiple instance learning problem and formulates the learning problem as a nonconvex nonsmooth unconstrained optimization