1. Record Nr. UNINA9910337641603321

Autore	Fathi Mohammad
Titolo	Optimization in Electrical Engineering / / by Mohammad Fathi, Hassan Bevrani
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-030-05309-1
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (IX, 174 p. 60 illus., 43 illus. in color.)
Disciplina	519.3 519.6
Soggetti	Power electronics Mathematical optimization Energy systems Power Electronics, Electrical Machines and Networks Optimization Energy Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Linear Algebra Review -- Set constrained Optimization -- Convex Programming -- Duality -- LMI-based Optimization -- Artificial intelligence and evolutionary algorithms based optimization.
Sommario/riassunto	This textbook provides students, researchers, and engineers in the area of electrical engineering with advanced mathematical optimization methods. Presented in a readable format, this book highlights fundamental concepts of advanced optimization used in electrical engineering. Chapters provide a collection that ranges from simple yet important concepts such as unconstrained optimization to highly advanced topics such as linear matrix inequalities and artificial intelligence-based optimization methodologies. The reader is motivated to engage with the content via numerous application examples of optimization in the area of electrical engineering. The book begins with an extended review of linear algebra that is a prerequisite to mathematical optimization. It then precedes with unconstrained optimization, convex programming, duality, linear

matrix inequality, and intelligent optimization methods. This book can be used as the main text in courses such as Engineering Optimization, Convex Engineering Optimization, Advanced Engineering Mathematics and Robust Optimization and will be useful for practicing design engineers in electrical engineering fields. Author provided cases studies and worked examples are included for student and instructor use.