Record Nr. UNICASCFI0078412 Autore Jiménez de Rada, Rodrigo Roderici Ximenii de Rada Opera omnia Titolo Turnholti, : Typographi Brepols editores pontificii Pubbl/distr/stampa Descrizione fisica v.; 26 cm. Collana Corpus Christianorum, . Continuatio Mediaevalis Lingua di pubblicazione Latino Spagnolo **Formato** Materiale a stampa Livello bibliografico Monografia Record Nr. UNINA9910637694403321 Autore Suh Changho Titolo Convex Optimization for Machine Learning Norwell, MA:,: Now Publishers,, 2022 Pubbl/distr/stampa ©2022 **ISBN** 1-63828-053-3 Edizione [1st ed.] Descrizione fisica 1 electronic resource (379 p.) NowOpen Collana Disciplina 006.31 Soggetti Optimization Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia

Sommario/riassunto

This book covers an introduction to convex optimization, one of the powerful and tractable optimization problems that can be efficiently

solved on a computer. The goal of the book is to

help develop a sense of what convex optimization is, and how it can be

used in a widening array of practical contexts with a particular

emphasis on machine learning.

The first part of the book covers core concepts of convex sets, convex functions, and related basic definitions that serve understanding convex optimization and its corresponding models. The second part deals with one very useful theory, called duality, which enables us to: (1) gain algorithmic insights; and (2) obtain an approximate solution to non-convex optimization problems which are often difficult to solve. The last part focuses on modern applications in machine learning and deep learning.

A defining feature of this book is that it succinctly relates the "story" of how convex optimization plays a role, via historical examples and trending machine learning applications. Another key feature is that it includes programming implementation of a variety of machine learning algorithms inspired by optimization fundamentals, together with a brief tutorial of the used programming tools. The implementation is based on Python, CVXPY, and TensorFlow.

This book does not follow a traditional textbook-style organization, but is streamlined via a series of lecture notes that are intimately related, centered around coherent themes and concepts. It serves as a textbook mainly for a senior-level undergraduate course, yet is also suitable for a first-year graduate course. Readers benefit from having a good background in linear algebra, some exposure to probability, and basic familiarity with Python.