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Titolo	Matrix-Based Introduction to Multivariate Data Analysis / / by Kohei Adachi
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ISBN	9789811541032 9811541035
Edizione	[2nd ed. 2020.]
Descrizione fisica	1 online resource (457 pages) : illustrations
Disciplina	519.535
Soggetti	Statistics Social sciences - Statistical methods Mathematical statistics - Data processing Computer science - Mathematics Mathematical statistics Statistical Theory and Methods Statistics in Engineering, Physics, Computer Science, Chemistry and Earth Sciences Statistics in Social Sciences, Humanities, Law, Education, Behavorial Sciences, Public Policy Statistics and Computing Statistics in Business, Management, Economics, Finance, Insurance Probability and Statistics in Computer Science
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Elementary matrix operations -- Intravariable statistics -- Inter-variable statistics -- Regression analysis -- Principal component analysis -- Principal component.
Sommario/riassunto	This is the first textbook that allows readers who may be unfamiliar with matrices to understand a variety of multivariate analysis procedures in matrix forms. By explaining which models underlie particular procedures and what objective function is optimized to fit the model to the data, it enables readers to rapidly comprehend multivariate data analysis. Arranged so that readers can intuitively

grasp the purposes for which multivariate analysis procedures are used, the book also offers clear explanations of those purposes, with numerical examples preceding the mathematical descriptions. Supporting the modern matrix formulations by highlighting singular value decomposition among theorems in matrix algebra, this book is useful for undergraduate students who have already learned introductory statistics, as well as for graduate students and researchers who are not familiar with matrix-intensive formulations of multivariate data analysis. The book begins byexplaining fundamental matrix operations and the matrix expressions of elementary statistics. Then, it offers an introduction to popular multivariate procedures, with each chapter featuring increasing advanced levels of matrix algebra. Further the book includes in six chapters on advanced procedures, covering advanced matrix operations and recently proposed multivariate procedures, such as sparse estimation, together with a clear explication of the differences between principal components and factor analyses solutions. In a nutshell, this book allows readers to gain an understanding of the latest developments in multivariate data science.