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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	1 Three-Way Principal Component Analysis with its Applications to Psychology (Kohei Adachi) -- 2 Non-negative matrix factorization and its variants for audio signal processing (Hirokazu Kameoka) -- 3 Generalized Tensor PCA and its Applications to Image Analysis (Kohei Inoue) -- 4 Matrix Factorization for Image Processing (Noboru Murata) -- 5 Arrays Normal Model and Incomplete Array Variate Observations (Deniz Akdemir) -- 6 One-sided Tests for Matrix Variate Normal Distribution (Manabu Iwasa and Toshio Sakata).
Sommario/riassunto	This book provides comprehensive reviews of recent progress in matrix variate and tensor variate data analysis from applied points of view. Matrix and tensor approaches for data analysis are known to be extremely useful for recently emerging complex and high-dimensional data in various applied fields. The reviews contained herein cover recent applications of these methods in psychology (Chap. 1), audio signals (Chap. 2) , image analysis from tensor principal component analysis (Chap. 3), and image analysis from decomposition (Chap. 4), and genetic data (Chap. 5) . Readers will be able to understand the present status of these techniques as applicable to their own fields. In Chapter 5 especially, a theory of tensor normal distributions, which is a basic in statistical inference, is developed, and multi-way regression,

classification, clustering, and principal component analysis are exemplified under tensor normal distributions. Chapter 6 treats one-sided tests under matrix variate and tensor variate normal distributions, whose theory under multivariate normal distributions has been a popular topic in statistics since the books of Barlow et al. (1972) and Robertson et al. (1988). Chapters 1, 5, and 6 distinguish this book from ordinary engineering books on these topics.