1.	Record Nr.	UNISA996466403803316
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	Titolo	Advanced linear and matrix algebra / / Nathaniel Johnston
	Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2021] ©2021
	ISBN	3-030-52815-4
	Edizione	[1st ed. 2021.]
	Descrizione fisica	1 online resource (XVI, 494 p. 123 illus., 108 illus. in color.)
	Disciplina	512.5
	Soggetti	Algebras, Linear Matrices Àlgebra lineal Matrius (Matemàtica) Algebra Llibres electrònics
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di bibliografia	Includes bibliographical references and index.
	Nota di contenuto	Chapter 1: Vector Spaces -- Chapter 2: Matrix Decompositions -- Chapter 3: Tensors and Multilinearity -- Appendix A: Mathematical Preliminaries -- Appendix B: Additional Proofs -- Appendix C: Selected Exercise Solutions.
	Sommario/riassunto	This textbook emphasizes the interplay between algebra and geometry to motivate the study of advanced linear algebra techniques. Matrices and linear transformations are presented as two sides of the same coin, with their connection motivating inquiry throughout the book. Building on a first course in linear algebra, this book offers readers a deeper understanding of abstract structures, matrix decompositions, multilinearity, and tensors. Concepts draw on concrete examples throughout, offering accessible pathways to advanced techniques. Beginning with a study of vector spaces that includes coordinates, isomorphisms, orthogonality, and projections, the book goes on to focus on matrix decompositions. Numerous decompositions are explored, including the Shur, spectral, singular value, and Jordan decompositions. In each case, the author ties the new technique back to familiar ones, to create a coherent set of tools. Tensors and

multilinearity complete the book, with a study of the Kronecker product, multilinear transformations, and tensor products. Throughout, "Extra Topic" sections augment the core content with a wide range of ideas and applications, from the QR and Cholesky decompositions, to matrix-valued linear maps and semidefinite programming. Exercises of all levels accompany each section. Advanced Linear and Matrix Algebra offers students of mathematics, data analysis, and beyond the essential tools and concepts needed for further study. The engaging color presentation and frequent marginal notes showcase the author's visual approach. A first course in proof-based linear algebra is assumed. An ideal preparation can be found in the author's companion volume, Introduction to Linear and Matrix Algebra.