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Titolo	Before Machine Learning . Volume 1 Linear Algebra [[electronic resource]] : a story on fundamental mathematics for A.I. / / Jorge Brasil
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Descrizione fisica	1 online resource (151 p.)
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Soggetti	Machine learning Artificial intelligence Algebras, Linear
Lingua di pubblicazione	Inglese
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Note generali	Description based upon print version of record.
Nota di contenuto	Intro -- Contents -- We Start Here -- Why Linear Algebra? -- What Is a Vector? -- Is That a Newborn? Vector Addition -- Wait, Is That Vector on Steroids? Scalar Multiplication -- Where Are You Looking, Vector? The Dot Product -- A Simpler Version of the Universe -- The Vector Space -- But What About a Matrix? -- When a Table Isn't Furniture -- Yoga for Vectors -- Linear Transformations -- Could It Be Love? Matrix and Vector Multiplication -- When It's Not Rude to Ask About Size -- The Determinant -- Let's Go The Other Way Around -- Inverse of a Matrix Gatherings in Space -- Systems of Linear Equations -- Line Up Vectors! The Eigen Stuff -- I've Got the Power, to Power -- Matrix Diagonalization -- Break Them Down -- Matrix Decomposition -- Me, Myself and I -- The Single Value Decomposition (SVD) -- The Final Stretch -- Principal Component Analysis -- We Did It! -- Blank Page
Sommario/riassunto	"Unlock the essentials of linear algebra to build a strong foundation for machine learning. Dive into vectors, matrices, and principal component analysis with expert guidance in ""Before Machine Learning Volume 1 - Linear Algebra."" Key Features Comprehensive introduction to linear algebra for machine learning Detailed exploration of vectors and matrices In-depth study of principal component analysis (PCA) Book

Description In this book, you'll embark on a comprehensive journey through the fundamentals of linear algebra, a critical component for any aspiring machine learning expert. Starting with an introductory overview, the course explains why linear algebra is indispensable for machine learning, setting the stage for deeper exploration. You'll then dive into the concepts of vectors and matrices, understanding their definitions, properties, and practical applications in the field. As you progress, the course takes a closer look at matrix decomposition, breaking down complex matrices into simpler, more manageable forms. This section emphasizes the importance of decomposition techniques in simplifying computations and enhancing data analysis. The final chapter focuses on principal component analysis, a powerful technique for dimensionality reduction that is widely used in machine learning and data science. By the end of the course, you will have a solid grasp of how PCA can be applied to streamline data and improve model performance. This course is designed to provide technical professionals with a thorough understanding of linear algebra's role in machine learning. By the end, you'll be well-equipped with the knowledge and skills needed to apply linear algebra in practical machine learning scenarios. What you will learn Understand the fundamental concepts of vectors and matrices Implement principal component analysis in data reduction Analyze the role of linear algebra in machine learning Enhance problem-solving skills through practical applications Gain the ability to interpret and manipulate high-dimensional data Build confidence in using linear algebra for data science projects Who this book is for This course is ideal for technical professionals, data scientists, aspiring machine learning engineers, and students of computer science or related fields. Additionally, it is beneficial for software developers, engineers, and IT professionals seeking to transition into data science or machine learning roles. A basic understanding of high school-level mathematics is recommended but not required, making it accessible for those looking to build a foundational understanding before diving into more advanced topics.".