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Simovici, Dan A.

Linear algebra tools for data mining.

Hackensack, NJ: World Scientific (ISBN 978-981-4383-49-3/hbk; 978-981-4383-50-9/ebook). xiv, 863 p. (2012).

The book is divided in two parts and is intended to graduate students and researchers who have concerns in data mining and pattern recognition. In order to help the readers interested in applications presented in this volume, the author includes in the first part the most of the mathematical background that is needed: modules and linear spaces, matrices, interactive system – MATLAB, determinants, norms, inner product, convexity, eigenvalues, similarity and spectra, singular values. In the second part “Applications” included are: graphs, sample matrices, biplots, least squares approximation, principal component analysis, the k -means algorithm and convexity, spectral clustering algorithms, etc. *Costică Moroşanu (Iaşi)*

Classification: H15 H65

Keywords: linear algebra; matrix theory; numerical linear algebra; computer science; learning theory; text-book; data mining; pattern recognition; modules; interactive system; MATLAB; determinants; norms; inner product; eigenvalues; similarity; spectra; singular values; graphs; sample matrices; biplots; least squares approximation; principle component analysis; k -means algorithm; convexity; spectral clustering

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