

Introduction

Linear Algebra
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Syllabus

course webpage:

<http://www.minho-kim.com/courses/12sp71007>

Table of Contents of the Textbook

1. Vectors
2. Systems of Linear Equations
3. Matrices
4. Eigenvalues and Eigenvectors
5. Orthogonality
6. Vector Spaces
7. Distance and Approximation

Applications

(<http://aix1.uottawa.ca/~jkhoury/app.htm>)

- ▶ Coding theory: error-detecting code, error-correcting code, Hamming code
- ▶ Cryptography: encoding/decoding matrices
- ▶ Economics: Leontief input-output model
- ▶ Games: finite linear games, magic square
- ▶ Image compression: Haar wavelet transform, SVD (Singular Vector Decomposition)
- ▶ Graph/network theory: social network, Google's PageRank