Introduction to linear algebra
Course Logistics

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Texts & Resourses

Textbooks

- Linear Algebra for Computer Science [2021], Thulasidas. (**Course**-**Main**)
- Linear Algebra and Its Applications [4th ed], Strang. (**CS**-**Complementary**)
- Linear Algebra [2nd ed], Hoffman. (**TA**-**Main**)
- Applied Linear Algebra [2nd ed], Olver. (**Math**-**Complementary**)

Texts & Resources

Courses

- Linear Algebra 101, Strang. (**YouTube, MIT Opencourseware**)
- Linear Algebra 101, Shahshahani. (**Maktabkhooneh, OCW Sharif**)

Syllabus

TA Syllabus

- Mathematical Preliminaries
- Vector Fields and Linearity
- Dimension and Basis
- Linear Transformations
- Matrix Spaces and Dual forms
- Matrix Representation and Matrix Operations
- Linear Equations
- Eigenvalues and Eigenvectors
- Polynomials
- Interpolation
- Inner Product Spaces

Grading

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- Attendance:
- Assignments:
- Exam (I):
- Exam (II):
- Exam (III):
- Exam (IV):
- Final:
- Project:
- TA:

Programming
Programming Languages

There is no OBLIGATION to use a specific programming language

- Matlab $\rightarrow$ Mainly used in TA Classes
- Python $\rightarrow$ Suggested language for class project

Project Description
Dimensionality Reduction using PCA Method

Project Phases

- Phase I (Theory): Methods of Machine Learning
- Phase II (Application): Basic Setup Methods
- Phase III (Theory): The Curse of Dimensionality
- Phase IV (Application): Dimensionality Reduction
- Phase V (Theory): Classification Methods
- Phase VI (Application): Classification of Dataset

Disscusion

Telegram Group

Click on the link to join: https://t.me/+llT7y5W0MMw4ZWM0

E-Mails

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Important Links

Hyper Refrences

- Github Repo
- LMS Page