1.1 Learn Basics of Mathematics and Statistics
Koło Naukowe AI PJWSTK

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April 18, 2023

Overview

1 Linear Algebra

2 Calculus

3 Probability

4 Statistics

Linear Algebra

- Matrices and vectors
- Matrix operations (addition, multiplication, transpose)
- Determinants and inverses
- Eigenvalues and eigenvectors
- Linear transformations and space

Calculus

- Limits and continuity
- Differentiation (single and multivariable)
- Integration (single and multivariable)
- Partial derivatives
- Optimization problems

Probability

- Basic probability axioms
- Conditional probability and Bayes' theorem
- Discrete random variables and distributions (e.g., Bernoulli, binomial, Poisson)
- Continuous random variables and distributions (e.g., uniform, normal, exponential)
- Joint, marginal, and conditional distributions

Statistics

- Descriptive statistics (mean, median, mode, variance, standard deviation)
- Inferential statistics (confidence intervals, hypothesis tests, p-values)
- Regression analysis (linear regression, correlation)
- Bayesian statistics
- Statistical learning and model selection