Statistics

Instructor

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Office Location

Dept. of CENG

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Office Hours

4 pm – 5 pm, Mondays

Course Overview

Statistics (Teams Code: v4dxmos)

We are going to learn both the mathematical foundations and real-world application of the statistics and the probability in this course. Focus of this course will be to provide the required background for a data science / machine learning course. Python is preferred as the programming language for the applications of this course.

Required Text

Probability And Statistics for Computer Scientists, CRC Press, *Michael Baron*

Introduction to Probability and Statistics, Elsevier, *Sheldon M. Ross*

Probability and Statistics for Engineers and Scientists, Brooks/Cole, *A.J. Hayter*

Course Materials

- Python 3.x (Anaconda is preferred)
- Jupyter Notebook from Anaconda
- Pycharm from JetBrains / Visual Studio Code from Microsoft

Course Schedule

Week	Subject	Week	Subject
01	Definitions of Descriptive Statistics	08	Linear Regression
02	Data, Sampling, and Variation	09	Linear Regression with Matrix Algebra
03	Visualization of Data	10	Regression with High Degree Polynomials
04	Measures of Central Tendency	11	Data Linearization and Transformation
05	Measures of Variation	12	Chi-Square and Goodness-of-Fit Tests
06	Measures for Multiple Variables	13	Central Limit Theorem
07	Box Plots and Outliers	14	Probability Distributions