Assignments: What They Are and How It Works

Assignments: How Does It Work?

As mentioned in the main page, the course will consists of **5 assignment** sets. The assignments includes *Written Questions* that are to be solved (or briefly answered), and *Programming Tasks* which are to be implemented in **Python.**

Code of Honor
Assignments are designed to enhance your understanding and skills, constituting a significant portion of your final assessment. They must be completed ***individually***, as engaging in any form of academic dishonesty violates the principles of the Code of Honor. If you encounter any challenges while solving the assignments, please contact the instructional team for guidance.

!! VERY IMPORTANT: Submission Rules !!

When submitting, please **make sure to follow the instructions indicated at the preface of the assignment file**. Note that these instructions are very important for correction and investigation of your submissions. **Deviation** from these instructions could lead to **up to 10% deduction (per item)**.
• The assignments are to be submitted over Crowdmark.
  ◦ *Please pay **strict attention** to the format of the submitted file.*
• The deadlines are **very strict** and cannot be extended for the sake of fairness
  ◦ *You have roughly 2 weeks time to complete each assignment*

Topics of Assignments

The topics covered in each assignment are given below. There is currently a preliminary schedule for them that is mentioned in front of each assignment. In case that anything changes, you'll be informed of course. The date refers to the time the assignment is uploaded and there will be 2 weeks time to submit.

Assignment 1: Unsupervised Learning -- *Week 2*

- k-means clustering
- Overview of basic concepts in linear algebra
- Some basic implementation in Python

Assignment 2: Linear Regression -- *Week 4*

1. Simple linear regression formulation
2. Derivation of vectorized form
3. Discussions on optimality and regularization
4. Some basic implementation in Python

Assignment 3: Support Vector Machines and Classification -- *Week 6*

1. Basics of SVM
2. Binary classification
3. Implementation in Python

Assignment 4: Neural Networks -- *Week 9*

1. Implementing a simple neural network
2. Training the model
3. Hyperparameter tuning
4. Early stopping

Assignment 5: Convolutional Neural Networks -- *Week 11*

1. Idea of convolution
2. Implementing a simple CNN
3. Training the model

How to Get the Assignments

The assignments will be uploaded in their corresponding module in the Assignments section. You will get the notification.