

CSCI 567: Machine Learning

Programming Assignment 2

Regression and SVM

Due June 4, 2023, 23:59:59 PST

Overview

This assignment consists of 3 parts:

1. Linear Regression [30 marks]
2. Support Vector Machines [55 marks]
3. Logistic Regression [15 marks]

Grading and Submission

Students need to implement their code in Python. The marks distribution is given inside the notebook itself. Each of the 3 parts mentioned above has been divided into sub-parts. The maximum marks a student can earn from this assignment is 100 marks. Students will be graded on the submitted notebook. All solutions must be submitted via the DEN platform. **Any other forms of submission won't be entertained.**

Make sure your notebook has the outputs displayed before you submit the assignment to DEN.

**When submitting the assignment, make sure to rename your file as
FirstName_LastName_USCID_PA2.ipynb**

Submit the downloaded Colab notebook which shows the results to Desire2learn. You may work in groups of 2-3 for only discussing the high-level concepts related to the homework and not writing the code. Each person should hand in their own code.

**There are NO late days for assignments, and we will not accept late submissions.
We won't regrade assignments.**

You are free to submit the assignment more than once on D2L, only the last submission will be considered as the final submission. So make sure you start the assignment early and submit it early to avoid any technical issues at the last moment.

Academic Honesty and Integrity

All homework material is checked vigorously for dishonesty using several methods. All detected violations of academic honesty are forwarded to the Office of Student Judicial Affairs. To be safe you are urged to err on the side of caution. Do not copy work from another student or off the web. Keep in mind that sanctions for dishonesty are reflected in *your permanent record* and can negatively impact your future success. As a general guide:

1. **Do not copy** code or written material from another student. Even single lines of code should not be copied.
2. **Do not copy** code off the web. This is easier to detect than you may think.
3. **Do not share** any custom test cases you may create to check your program's behavior in more complex scenarios than the simplistic ones considered below.
4. **Do not copy** code from past students. We keep copies of past work to check for this. Even though this problem differs from those of previous years, do not try to copy from homeworks of previous years.
5. **Do not ask on piazza** how to implement some function for this homework, or how to calculate something needed for this homework.
6. **Do not post code on piazza** asking whether or not it is correct. This is a violation of academic integrity because it biases other students who may read your post.
7. **Do not post test cases on piazza** asking for what the correct solution should be.
8. **Do** ask the professor or TAs if you are unsure about whether certain actions constitute dishonesty. It is better to be safe than sorry.