

CS 250 Spring 2025

Homework Assignment 5 (Extra Credit)

Due on Moodle: Before class on Friday, March 7. Mail submissions will not be accepted. Submit one single Jupyter Notebook for all questions.

This is an optional, extra credit HW. That means, you don't lose anything for not doing it, but it lets you make up for lost HW credit.

This is based on the online tutorial about nonlinear regression linked on Moodle.

For this homework assignment, download the Fish market dataset given earlier on Moodle and do the following:

1. Isolate two columns from the data – Width and Weight. Width is your independent variable and Weight is the dependent variable. You can throw away the rest of the data. [5 points]
2. Fit linear, quadratic and cubic curves on this data. You may take the help of Google or any other source to learn how to do this in Python, but write down where you learnt it as a comment. You can use the whole data as training. [10 points]
3. In three separate figures, scatter plot the data, and on the same axes, plot the three curves from the previous example (one in each figure) to show how well they fit the data. In other words, each figure will have an axis with the same scattered points, and one curve. These curves will be linear (line), quadratic, and cubic respectively. [10 points]