

HW02 PART 2

Instructions:

- ❖ You are NOT allowed to use any GenAI based assistance like ChatGPT (there are more like it, obviously don't use any of them) but you can use Google.
- ❖ Each question is worth 5 points.
- ❖ Please type in your answers, save as pdf and upload.
- ❖ For answers where you may want to include equations and/or graphs, you are allowed to write free hand and insert pictures of it.
- ❖ Your answers shouldn't be too wordy. They need to be concise and to the point.

1. Explain bias and variance. Explain the bias/variance trade off.
2. What do you mean by the cost function?
3. For predicting continuous values, we use linear regression but for predicting classes we use logistic regression. Why do we use the sigmoid function for logistic regression?
4. What is the difference between Maximum likelihood and negative log likelihood? Why do we take negative log of the cost function in logistic regression?
5. Gradient descent is an optimization algorithm through which the hyperparameters of your hypothesis are updated, based on the cost function. Can you explain how parameters are updated with gradient descent?
6. What are the benefits of using k-fold cross validation?