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Q4: Can a model have high accuracy but still perform poorly? Explain. [3 marks] Yes, it can do this doe to overfilling. A model can be trained to idealify every single bring clement of the Yes, it can do this due to overfilting. A model can identify away the whole training dataset connectly but it would not generalize , leading to it performing poorly in the test dataset.

Q6: Why is a complex model more prone to overfitting? [3 marks] This is because there are more layers of neurons in the model so that he model learns better than simpler models. In doing this, high variance and low may occur, making vulneable to overfithing than endstitting (low variace, high bias).

Q10: How does pruning improve the performance of a Decision Tree? [3 marks] Therefore two ways it does. One is during pre-preming where it the plecision thee is stopped if it does not hit a certain threshold. In jost prining, which are not required a while all these Princip cuts off the branches of the decision trees, culting off those if a certain feature does not hit a certain threshold. It improves the tree - robustness and performance of the tree. Through past and preprinty, it improves the tree.

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oplied Machine Learning

Quiz 1

Date: Feb 10th 2025 Course Instructor(s)

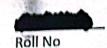
Total Time (Min): Total Marks:

Ms. Anosha Khan

Total Questions: 5

30

15







Answer the Following Questions. Write short and to the point. Not more than 2 to 3 Lines

Q1: What is the difference between supervised and unsupervised learning? [3 marks]
Supervised learning is when data which is labelled is given to
a model to hain it on lidentifying labels. Unsuperised learning is
when data not labelled is given to a model and the model that
when a model has to be traved to label data which is not labelled beforehand.

on what baris?

3

Q3: What is the difference between Decision Trees and Random Forests? [3 marks]

Decision trees split a defased based on certain conditions. Landom forests is an ear ensemble of multiple decision trees and their learnings are averaged. Budom trees are less prove to our filting than decision trees. forests

