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Unit 2 - Week 1

Assignment 1

Due date for this assignment: 2018-09-12, 23:59 IST.

1) Which ONE of the following are regression tasks? ***1 point***

- ○ A) Predict the age of a person
- ○ B) Predict the country from where the person comes from
- ○ C) Predict whether the price of petroleum will increase tomorrow
- ○ D) Predict whether a document is related to science

2) Which of the following is a supervised learning problem? ***1 point***

- ☐ A) Grouping people in a social network.
- ☐ B) Predicting credit approval based on historical data
- ☐ C) Predicting rainfall based on historical data
- ☑ D) all of the above

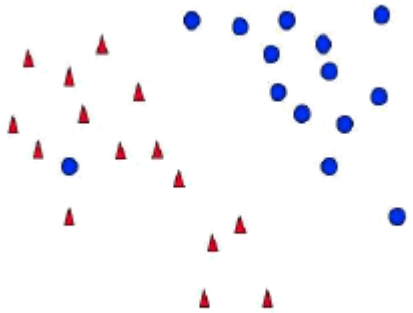
3) Which of the following are classification tasks? (Mark all that apply) ***1 point***

- ☑ A) Find the gender of a person by analyzing his writing style
- ☐ B) Predict the price of a house based on floor area, number of rooms etc.
- ☑ C) Predict whether there will be abnormally heavy rainfall next year
- ☐ D) Predict the number of copies of a book that will be sold this month

4) Which of these are categorical features? ***1 point***

- ○ A) Height of a person
- ○ B) Price of petroleum
- ○ C) Mother tongue of a person
- ○ D) Amount of rainfall in a day

5) What would be the ideal complexity of the curve which can be used for separating the two classes shown in the image below? ***1 point***



- A) Linear
- B) Quadratic
- C) Cubic
- D) insufficient data to draw conclusion

6) Occam's razor is an example of: ***1 point***

- (a) Inductive bias
- (b) Preference bias

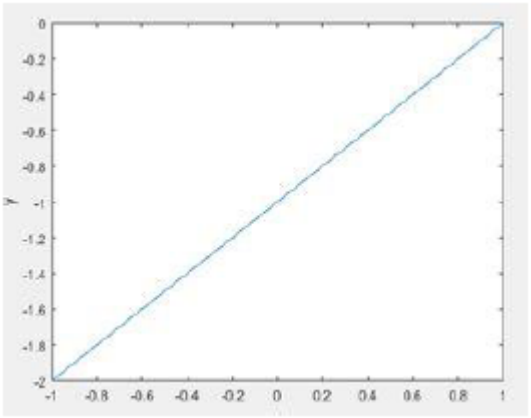
7) How does generalization performance change with increasing size of training set? ***1 point***

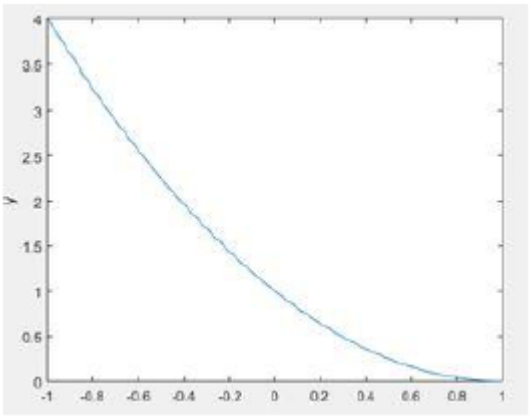
- A) Improves
- B) Deteriorates
- C) No Change
- D) None

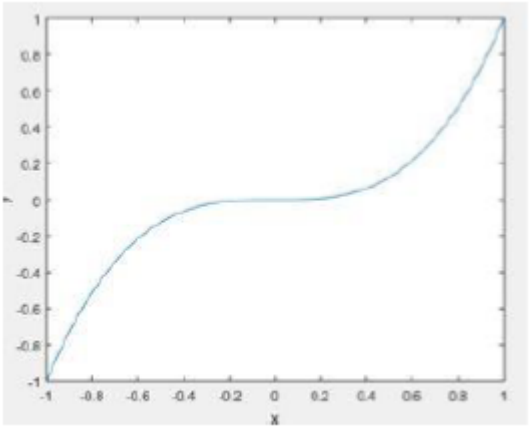
8) One of the most common uses of Machine Learning today is in the domain of Robotics. Robotic tasks include a multitude of ML methods tailored towards navigation, robotic control and a number of other tasks. Robotic control includes controlling the actuators available to the robotic system. An example of this is control of a painting arm in automotive industries. The robotic arm must be able to paint every corner in the automotive parts while minimizing the quantity of paint wasted in the process. Which of the following learning paradigms would you select for training such a robotic arm? ***1 point***

- A) Supervised learning
- B) Unsupervised learning
- C) Combination of supervised and unsupervised learning
- D) Reinforcement learning

9) Choose the function that has the maximum variance: ***1 point***

a) 

b) 

c) 

10) I am the marketing consultant of a leading e-commerce website. I have been given a task of making a system that recommends products to users based on their activity on Facebook. I realize that user-interests could be highly variable. Hence I decide to ***1 point***

a. First, cluster the users into communities of like-minded people and

b. Second, train separate models for each community to predict which product category (e.g. electronic gadgets, cosmetics, etc.) would be the most relevant to that community.

The first task is a/an _____ learning problem while the second is a/an _____ problem.

Choose from the options:

- A) Supervised and unsupervised
- B) Unsupervised and supervised
- C) Supervised and supervised
- D) Unsupervised and unsupervised

You may submit any number of times before the due date. The final submission will be considered for grading.

Submit Answers

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