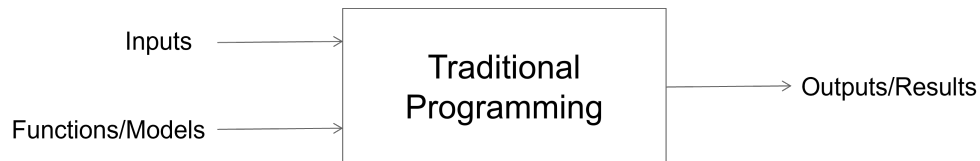


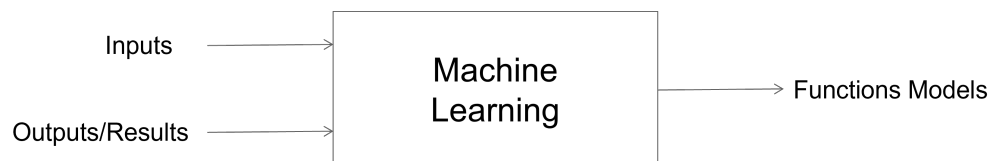
Course: Machine Learning Techniques
Week 1: Graded Questions

Graded Questions

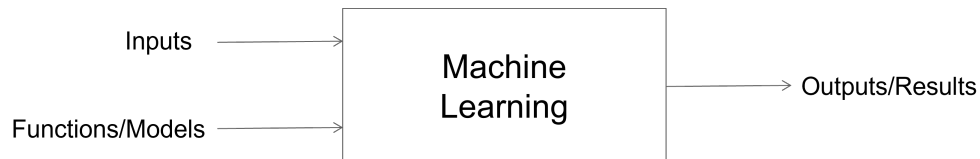
1. (1 point) (Multiple select) Which of the following block diagrams is/are correct?



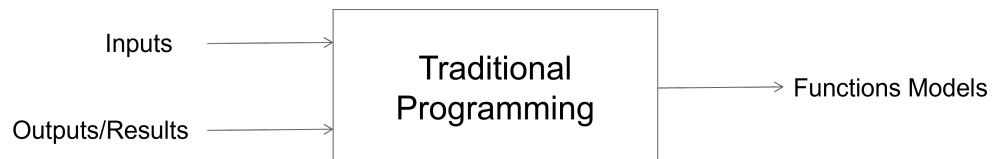
A.



B.



C.



D.

Answer: A,B

2. (1 point) Consider the following statements

1. Traditional programming can not work well in absence of fixed rules to obtain output from input.
2. Machine Learning based models work well if the rules for obtaining output from input are not well defined.
3. Traditional programming requires exact mathematical formulation of the problem in hand.

Which of the above statements are correct?

- A. 1 and 2
- B. 1,2 and 3
- C. 1 and 3
- D. 2 and 3

Answer: B

3. (1 point) (Multiple select) Which of the following label(s) can be considered discrete?

- A. stock price.
- B. Runs that a batsman can score in a cricket match.
- C. Gender of a customer.
- D. Blood group of a patient.

Answer: C,D

4. (1 point) Consider the following statements

- 1. Regression models are used if output is real valued and continuous.
- 2. Classification models are used if the output has fixed classes.
- 3. Both classification and regression models can be used interchangeably.

Which of the above statements are correct?

- A. 1 and 2
- B. 2 and 3
- C. 1 and 3
- D. 1,2 and 3

Answer: A

5. (1 point) Alice has a dataset of fruit pictures and corresponding name of the fruit. There are only three fruits in the dataset, namely “apple”, “banana” and “grape”. Which of the following techniques should Alice use?

- A. Binary classification
- B. Multi Label classification
- C. Rule learning
- D. Clustering

Answer: B

6. (1 point) (Multiple select) Which of the following is/are examples of generative models?
- A. Gradient descent
 - B. Markov random field
 - C. Hidden Markov model
 - D. Naive Bayes

Answer: B,C,D

7. (1 point) (multiple select) Venu wants to estimate the price of a house based on some characteristics which are no. of rooms in the house, area of the house, proximity to railway station. Which of the following are features in the problem?
- A. no. of rooms in the house
 - B. area of the house
 - C. proximity to railway station
 - D. house price

Answer: A,B,C

8. (1 point) Consider the following statements
1. In gradient descent algorithm, weight vector is updated by gradient computed from the entire training set.
 2. In mini batch gradient descent algorithm, weight vector is updated by gradient computed from a small number of examples from the training set.

Which of the above statements are true?

- A. 1
- B. 2
- C. 1 and 2
- D. None

Answer: C

9. (1 point) Consider the following characteristics
1. High training loss
 2. High validation loss
 3. Low training loss
 4. Low validation loss
- Which of the above characterises underfitting?

- A. 1 and 2
- B. 2 and 3
- C. 3 and 4
- D. 1 and 4

Answer: A

Connected Questions

Consider the following confusion matrix

		Predicted	
		FALSE	TRUE
Actual	FALSE	32	21
	TRUE	28	37

10. (points) Accuracy of the classification model represented by above confusion matrix is

Answer: 0.548

11. (points) Precision of the classification model represented by above confusion matrix is

Answer: 0.637

12. (points) Recall of the classification model represented by above confusion matrix is

Answer: 0.569