THE IOT ACADEMY :: ML QUIZ (Feb, 2020)

* Required

THE IOT ACADEMY :: ML QUIZ

This quiz has been brought by THE IOT ACADEMY (www.theiotacademy.co) to test ML knowledge to qualify our internship in UniConverge Technologies Pvt Ltd (www.uniconvergetech.in), recruitment drive participation program run by us.

K-fold cross-validation is * 1 point

- linear in K
- quadratic in K
- cubic in K
- exponential in K

Generalization error measures how well an algorithm perform on unseen data.The test error obtained using cross-validation is an estimate of the generalization error. Is this estimate unbiased? * 1 point

- Yes
- No

You observe the following while fitting a linear regression to the data: As you increase the amount of training data, the test error decreases and the training error increases. The train error is quite low (almost what you expect it to), while the test error is much higher than the train error. What do you think is the main reason behind this behavior. Choose the most probable option. * 1 point

- ○ High variance
- ○ High model bias
- ○ High estimation bias
- ○ None of the above

Adding more basis functions in a linear model... (pick the most probably option) * 1 point

- ○ Doesn't affect bias and variance
- ○ Decreases estimation bias
- ○ Decreases variance
- ○ Decreases model bias

Computational complexity of Gradient descent is, * 1 point

- ○ linear in D
- ○ linear in N
- ○ polynomial in D
- ○ dependent on the number of iterations

Which of the following sentence is FALSE regarding regression? 1 point

- ○ It relates inputs to outputs.
- ○ It is used for prediction.
- ○ It may be used for interpretation.
- ○ It discovers causal relationships.

What is the rank of the following matrix? A = Matrix [1 1 1; 1 1 1; 1 1 1] * 1 point

Your answer

Choose the options that are correct regarding machine learning (ML) and artificial intelligence (AI), * 1 point

- ☐ ML is an alternate way of programming intelligent machines.
- ☐ ML and AI have very different goals.
- ☐ ML is a set of techniques that turns a dataset into a software.
- ☐ AI is a software that can emulate the human mind.

Grid search is * 1 point

- ☐ Linear in D.
- ☐ Polynomial in D.
- ☐ Exponential in D.
- ☐ Linear in N.

The advantage of Grid search is (are) * 1 point

- [ ] It can be applied to non-differentiable functions.
- [ ] It can be applied to non-continuous functions.
- [ ] It is easy to implement.
- [ ] It runs reasonably fast for multiple linear regression.

A feature F1 can take certain value: A, B, C, D, E, & F and represents grade of students from a college. Which of the following statement is true in following case? * 1 point

- ( ) Feature F1 is an example of nominal variable
- ( ) Feature F1 is an example of ordinal variable.
- ( ) It doesn't belong to any of the above category.
- ( ) Both of these

Which of the following is an example of a deterministic algorithm? * 1 point

- ( ) PCA
- ( ) K-Means
- ( ) None of the above

A Pearson correlation between two variables is zero but, still their values can still be related to each other. * 1 point

- ( ) TRUE
- ( ) FALSE

Which of the following statement(s) is / are true for Gradient Decent (GD) and Stochastic Gradient Decent (SGD)? 1. In GD and SGD, you update a set of parameters in an iterative manner to minimize the error function. 2. In SGD, you have to run through all the samples in your training set for a single update of a parameter in each iteration. 3. In GD, you either use the entire data or a subset of training data to update a parameter in each iteration. * 1 point

- ○ Only 1
- ○ Only 2
- ○ Only 3
- ○ 1 and 2
- ○ 1 and 3
- ○ 1, 2 and 3

Which of the following hyper parameter(s), when increased may cause random forest to over fit the data? 1. Number of Trees 2. Depth of Tree 3. Learning Rate * 1 point

- ○ Only 1
- ○ Only 2
- ○ Only 3
- ○ 1 and 2
- ○ 1 and 3
- ○ 1, 2 and 3

Given below are three images (1,2,3). Which of the following option is correct for these images? * 1 point

Image 1

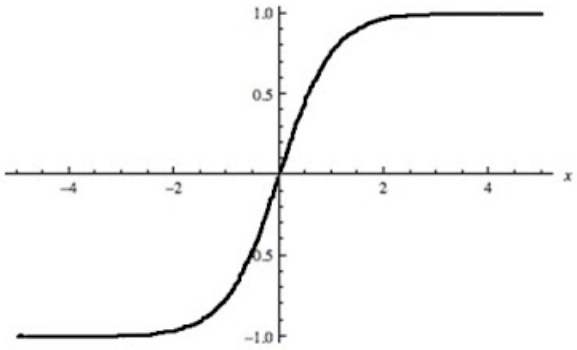


Image 3

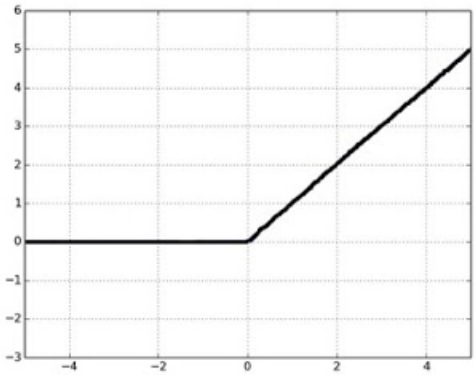
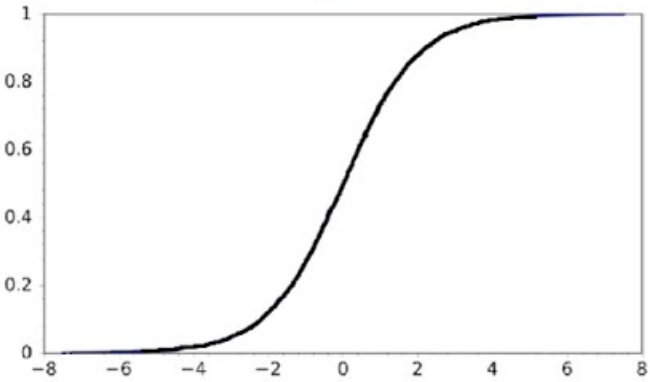


Image 2



- ◯ 1 is tanh, 2 is ReLU and 3 is SIGMOID activation functions
- ◯ 1 is SIGMOID, 2 is ReLU and 3 is tanh activation functions
- ◯ 1 is ReLU, 2 is tanh and 3 is SIGMOID activation functions
- ◯ 1 is tanh, 2 is SIGMOID and 3 is ReLU activation functions

Let's say, you are using activation function X in hidden layers of neural network. At a particular neuron for any given input, you get the output as "-0.0001". Which of the following activation function could X represent? * 1 point

- ReLU
- tanh
- SIGMOID
- None of these

LogLoss evaluation metric can have negative values. * 1 point

- TRUE
- FALSE

Which of the following is/are one of the important step(s) to pre-process the text in NLP based projects? 1. Stemming 2. Stop word removal 3. Object Standardization * 1 point

- 1 and 2
- 1 and 3
- 2 and 3
- 1, 2 and 3

Adding a non-important feature to a linear regression model may result in. 1 point
1. Increase in R-square 2. Decrease in R-square *

- ○ Only 1 is correct
- ○ Only 2 is correct
- ○ Either 1 or 2
- ○ None of these

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