Quizizz

Quiz Name: Quiz-1 (NNs history; DL Intro; ML revision; Perceptron)

Student: Konda Mopuri

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95%

Accuracy % (correct / total)

20	19	1	0
Total Questions	✔ Correct	✖ Incorrect	⊘ Unattempted

Questions

No.	Question	Time Taken	Score	Response
1	Why is Deep Learning recently taking off? (pick all the correct answers)	21 secs	600	✔ We have access to a lot more dataWe have access to huge computational powerIt has resulted in significant progress in fields such as NLP, CV, and Speech Processing
2	In PyTorch what is the motivation for operating in terms of tensors?	31 secs	0	To operate the hardware close to their peak performance.
3	Assuming i.i.d. training and test data, for some random model that has not been fit on the training dataset, the training error is expected to be _____ the test error	31 secs	600	✔ Similar to
4	In case of underfitting, both the training and test error are	10 secs	600	✔ Larger
5	Given a larger hypothesis space, there is a higher tendency for the model to _____ the training dataset	7 secs	600	✔ Overfit

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6	Given the following models trained using K-NN, the model which could result in overfitting will most likely have the value of K as	16 secs	600	✔ 3
7	A model suffering from underfitting will most likely be having	8 secs	600	✔ High bias
8	Bias is the tendency of models to provide very different results when trained with different cuts of data (i.e, getting biased to the training data).	26 secs	600	✔ False
9	For a given model (with fixed capacity or complexity) how does the size of training data influence its fitting behavior? Explain through the bias-variance decomposition (in about 3-5 sentences).	196 secs	1000	With more training data the variance of the model decreases. Lesser the training data, the model parameters (and there by the model behavior) change significantly with a change in the training dataset. Hence, it is always better to have large training data, it reduces the variance of the model.
10	Perceptron is used to classify the gray scale images of size 20 X 20 into two categories: face versus not-a-face. Considering each scalar takes 4 bytes memory to store, how much memory is needed to store the learned perceptron model?	10 secs	600	✔ 1.604 KB
11	A single perceptron unit can be used to learn any classification problem with 100% accuracy as long as it is a binary classification task.	8 secs	600	✔ False
12	Out of AND, OR, and XOR which of them can be learned accurately by a perceptron?	17 secs	600	✔ Only AND and OR

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13	If a perceptron classifies a set of N inputs (X^1, X^2, X^3, ... X^N) the same class. Then it classifies the mean of them also into the same class.	5 secs	600	✔ True
14	How do you define the capacity of a machine learning model?	95 secs	1000	It is the ability to model an arbitrary target function. Often, more the complexity of the hypothesis, better is its capacity.
15	Describe the 'density estimation' task in machine learning. Clearly explain it with an example in about 3-5 sentences.	149 secs	1000	It is the task of estimating the probability density of a random variable by observing its values in the form of a training dataset. For example, by recording the pitches of several women speakers, we can model the density of female pitch values. Density estimation can be used to identify outliers, or sample the modelled distribution to create data samples.
16	List the shortcomings of perceptron in about 2-4 sentences.	85 secs	1000	1. stops after finding the linear separator (doesn't look for the optimal boundary in some sense) 2. works with 100% accuracy only when the data is linearly separable
17	Imagine that you are asked to write a program to classify a 4-bit binary stream into even or odd categories based on the number of 1s present. One of the students implemented a program that counts the number of 1s to classify the input. Does it qualify to be a machine learning approach? Why or Why not?	257 secs	1000	No, it is not considered a machine learning approach. A solution defined through fixed set of rules is not considered an ML approach.
18	During the course of training a machine learning model, _____ is employed to find the goodness of the model.	9 secs	600	✔ loss function

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19	Can we realize the XNOR function using a single MP neuron (or Threshold Logic Unit)?	8 secs	600	✔ No, one can't
20	Deep learning strongly opposes (in spirit) the classical notion of hand-crafting the features because of the motivation for removing the necessity of domain expertise.	4 secs	600	✔ False