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24 Important Machine Learning Interview Questions And Answer

Introduction To Machine Learning Interview Questions and Answers

So you have finally found your dream job in Machine Learning but are wondering how to crack the Machine Learning interview and what could be the probable Machine Learning interview questions. Every interview is different and the scope of a job is different too. Keeping this in mind we have designed the most common Machine Learning Interview Questions and Answers to help you get success in your interview.

Below is the list of important Machine Learning Interview Questions and Answers

1.What do you understand by Machine Learning?

Machine Learning is an application of artificial intelligence (https://www.educba.com/artificial-intelligence-vs-business-intelligence/) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. Machine learning focuses on the development of computer programs that can access data and use it learn for themselves.

2.Give an example that explains Machine Leaning in industry.

Answer:

Robots are replacing humans in many areas. It is because robots are programmed such that they can perform the task based on data they gather from sensors. They learn from the data and behaves intelligently.

3.What are the different Algorithm techniques in Machine Learning?

Answer:
The different types of Algorithm techniques in Machine Learning are as follows:
• Reinforcement Learning (https://www.educba.com/supervised-learning-vs-reinforcement-learning/)
• Supervised Learning
• Unsupervised Learning
• Semi-supervised Learning
• Transduction
• Learning to Learn

4.What is the difference between supervised and unsupervised machine learning?

Answer:
A Supervised learning is a process where it requires training labeled data While Unsupervised learning it doesn't require data labeling.

5.What is the function of Unsupervised Learning?

Answer:
The function of Unsupervised Learning are as below:
• Find clusters of the data (https://www.educba.com/courses/all/technology/cluster-analysis-technology/) of the data
• Find low-dimensional representations of the data
• Find interesting directions in data
• Interesting coordinates and correlations
• Find novel observations

6.What is the function of Supervised Learning?

Answer:
The function of Supervised Learning are as below:
• Classifications
• Speech recognition
• Regression (https://www.educba.com/course/regression-modeling-minitab-module-1-basic/)
• Predict time series
• Annotate strings

7.What are the advantages of Naive Bayes?

The advantages of Naive Bayes are:

• The classifier will converge quicker than discriminative models

• It cannot learn interactions between features

8.What are the disadvantages of Naive Bayes?

Answer:

The disadvantages of Naive Bayes are:

• It is because the problem arises for continuous features

• It makes a very strong assumption on the shape of your data distribution

• It can also happen because of data scarcity

9.Why is naive Bayes so naive?

Answer:

Naive Bayes is so naive because it assumes that all of the features in a data set are equally important and independent.

10.What is Overfitting in Machine Learning?

Answer:

Overfitting in Machine Learning is defined as when a statistical model describes random error or noise instead of underlying relationship or when a model is excessively complex.

11.What are the conditions when Overfitting happens?

Answer:

One of the important reason and possibility of overfitting is because the criteria used for training the model is not the same as the criteria used to judge the efficacy of a model.

12.How can you avoid overfitting?

Answer:

We can avoid overfitting by using:

• Lots of data

• Cross-validation

13.What are the five popular algorithms for Machine Learning?

Answer:

Below is the list of five popular algorithms of Machine Learning:

• Decision Trees

• Probabilistic networks

• Nearest Neighbor

• Support vector machines

• Neural Networks

14.What are the different use cases where machine learning algorithms can be used?

Answer:

The different use cases where machine learning algorithms can be used are as follows:

• Fraud Detection (https://www.educba.com/fraud-detection-analytics/)

• Face detection (https://www.educba.com/course/face-detection-in-python/)

• Natural language processing

• Market segmentation (https://www.educba.com/how-to-perform-market-segmentation/)
• Text Categorization
• Bioinformatics

15.What are parametric models and Non-Parametric models?

Answer:

Parametric models are those with a finite number of parameters and to predict new data, you only need to know the parameters of the model.

Non Parametric models are those with an unbounded number of parameters, allowing for more flexibility and to predict new data, you need to know the parameters of the model and the state of the data that has been observed.

16.What are the three stages to build the hypotheses or model in machine learning?

Answer:

The three stages to build the hypotheses or model in machine learning are:

1. Model building

2. Model testing

3. Applying the model

17.What is Inductive Logic Programming in Machine Learning (ILP)?

Answer:

Inductive Logic Programming (ILP) is a subfield of machine learning which uses logical programming (https://www.educba.com/course/online-c-programming-course-training/) representing background knowledge and examples.

18.What is the difference between classification and regression?

Answer:

The difference between classification and regression are as follows:

• Classification is about identifying group membership while regression technique involves predicting a response.

• Classification and Regression techniques are related to prediction

• Classification predicts the belonging to a class whereas regression predicts the value from a continuous set

• Classification technique is preferred over regression when the results of the model need to return the belongingness of data points in a dataset with specific explicit categories

19.What are the difference between inductive machine learning and deductive machine learning?

Answer:

The difference between inductive machine learning and deductive machine learning are as follows:

machine learning (https://www.educba.com/data-mining-vs-machine-learning/) where model learns by examples from a set of observed instances to draw a generalized conclusion whereas in deductive learning the model first draws the conclusion and then the conclusion is drawn.
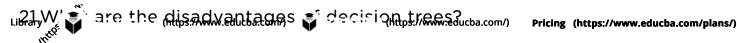
20.What are the advantages decision trees?

Answer:

The advantages decision trees are:

• Decision trees are easy to interpret

• Nonparametric

• There are relatively few parameters to tune

21.W are the disadvantages of decision trees?

Answer:

Decision trees are prone to be overfit. However, this can be addressed by ensemble methods like random forests or boosted trees.

22.What are the advantages of neural networks?

Answer:

Neural networks have led to performance breakthroughs for unstructured datasets (https://www.educba.com/course/datasets-vis-js/) such as images, audio (https://www.educba.com/course/audio-capture-android/), and video (https://www.educba.com/course/video-analytics-using-opencv-python-shells/). Their incredible flexibility allows them to learn patterns that no other Machine Learning algorithm can learn.

23.What are the disadvantages of neural networks?

Answer:

Neural Network requires a large amount of training data to converge. It's also difficult to pick the right architecture, and the internal "hidden" layers are incomprehensible.

24.What is the difference between L1 and L2 regularization?

Answer:

The difference between L1 and L2 regularization are as follows:

• L1/Laplace tends to tolerate both large values as well as very small values of coefficients more than L2/Gaussian

• L1 can yield sparse models while L2 doesn't

• L1 and L2 regularization prevents overfitting by shrinking on the coefficients

• L2 (Ridge) shrinks all the coefficient by the same proportions but eliminates none, while L1 (Lasso) can shrink some coefficients to zero, performing variable selection

• L1 is the first-moment norm |x1-x2| that is simply the absolute distance between two points where L2 is second-moment norm corresponding to Euclidean Distance that is |x1-x2|^2.

• L2 regularization tends to spread error among all the terms, while L1 is more binary/sparse

Recommended Articles

This has been a guide to List Of Machine Learning Interview Questions and Answers so that the candidate can crackdown these Machine Learning Interview Questions easily. This article consists of all Important Machine Learning Interview Questions and Answers in it.You may also look at the following articles to learn more –

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2. Top 5 Most Valuable Data Science Interview Questions (https://www.educba.com/data-science-interview-questions/)
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Vishal Bbau MAY 30, 2018 REPLY

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PLEASE CROSS VERIFY ANSWER OF QUESTION N, 12 ".HOW CAN YOU AVOID OVERFITTING?"

WE CAN NOT RESOLVE OVERFITTING PROBLEM BY LOTS OF DATA

Jesal Shethna MAY 30, 2018

WHY OVER-FITTING OCCURS?

IT IS BECAUSE LESS SAMPLE OF DATA. IF SAMPLE VALUE IS SMALL OR LOW – OVER-FITTING WILL OCCUR.

IF QUANTITY OF DATA INCREASES – SAMPLING WILL INCREASE. IT MEANS MODEL WILL WORK BETTER AND WE WILL AVOID OVER-FITTING.

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