Machine Learning Interview Questions

Whether you’re considering a career move into machine learning, or you’re already there and want to move up the career ladder, the job outlook is strong. However, that doesn’t guarantee you a job. There is a known shortage of qualified professionals in the machine learning field but employers require particular skills to be successful in each field.  To optimize your chances of getting hired, pursue a [certification in machine learning](https://www.simplilearn.com/big-data-and-analytics/machine-learning-certification-training-course), and prepare ahead of time for those crucial job interview questions.

To prepare for your interview, try to learn everything you can about a potential employer’s use of machine learning ahead of time, so you can anticipate at least some of the specific questions you’ll be asked. Do as much homework as you can in the industry you’re interviewing for, but also prepare for more general machine learning interview questions by demonstrating your broad knowledge of the field. Here are  12 potential interview questions and answers that will help.

1: What is machine learning?

In answering this question, try to show your understand of the broad applications of machine learning, as well as how it fits into AI. Put it into your own words, but convey your understanding that machine learning is a form of AI that automates data analysis to enable computers to learn and adapt through experience to do specific tasks without explicit programming.

2: What is your training in machine learning and what types of hands-on experience do you have?

Your answer to this question will depend on your [training in machine learning](https://www.simplilearn.com/big-data-and-analytics/machine-learning-certification-training-course). Be sure to emphasize any direct projects you’ve completed as part of your education. Don’t fail to mention any additional experience that you have including certifications and how they have prepared you for your role in the machine learning field.

3: What is deep learning?

This might or might not apply to the job you’re going after, but your answer will help to show you know more than just the technical aspects of machine learning. Deep learning is a subset of machine learning. It refers to using multi-layered neural networks to process data in increasingly complex ways, enabling the software to train itself to perform tasks like speech and image recognition through exposure to these vast amounts of data. Thus the machine undergoes continual improvement in the ability to recognize and process information. Layers of neural networks stacked on top of each for use in deep learning are called deep neural networks.

4: How do deductive and inductive machine learning differ?

Deductive machine learning starts with a conclusion, then learns by deducing what is right or wrong about that conclusion. Inductive machine learning starts with examples from which to draw conclusions.

5: How do you choose an algorithm for a classification problem?

The answer depends on the degree of accuracy needed and the size of the training set. If you have a small training set, you can use a low variance/high bias classifier. If your training set is large, you will want to choose a high variance/low bias classifier.

6: How do bias and variance play out in machine learning?

Both bias and variance are errors. Bias is an error due to flawed assumptions in the learning algorithm. Variance is an error resulting from too much complexity in the learning algorithm.

7: What are some methods of reducing dimensionality?

You can reduce dimensionality by combining features with feature engineering, removing collinear features, or using algorithmic dimensionality reduction.

8: How do classification and regression differ?

Classification predicts group or class membership. Regression involves predicting a response. Classification is the better technique when you need a more definite answer.

9: What is supervised versus unsupervised learning?

Supervised learning is a process of machine learning in which outputs are fed back into a computer for the software to learn from for more accurate results the next time. With supervised learning, the “machine” receives initial training to start. In contrast, unsupervised learning means a computer will learn without initial training.

10: What is kernel SVM?

Kernel SVM is the abbreviated version of kernel support vector machine. Kernel methods are a class of algorithms for pattern analysis and the most common one is the kernel SVM.

11. What is decision tree classification?

A decision tree builds classification (or regression) models as a tree structure, with datasets broken up into ever smaller subsets while developing the decision tree, literally in a tree-like way with branches and nodes. Decision trees can handle both categorical and numerical data.

12: What is a recommendation system?

Anyone who has used Spotify or shopped at Amazon will recognize a recommendation system: It’s an information filtering system that predicts what a user might want to hear or see based on choice patterns provided by the user.