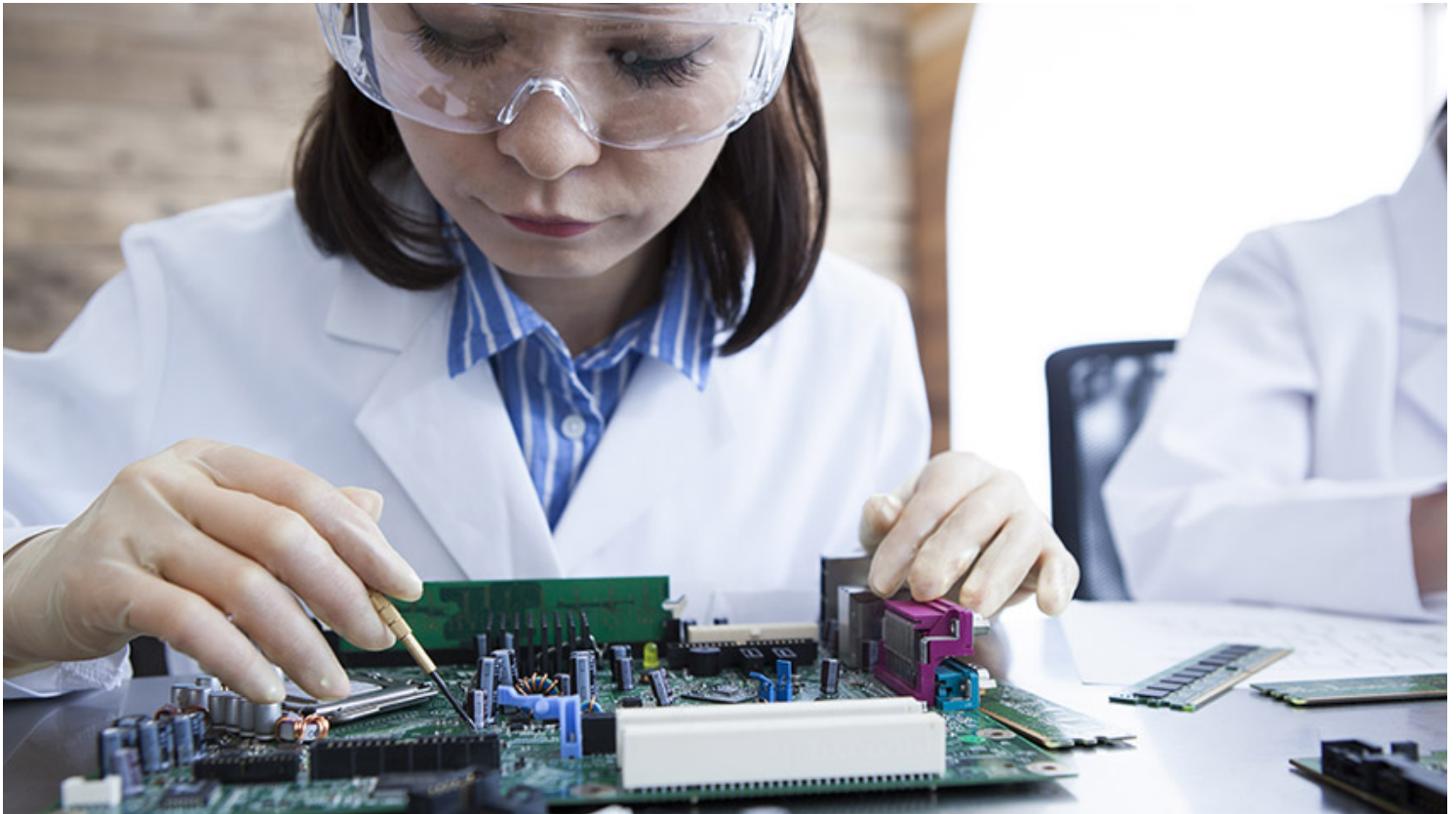


12 Important Machine Learning Interview Questions to Study Ahead of Time



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The emergence of [artificial intelligence \(AI\)](#) has caused a buzz of activity in the scientific community. Instead of being one subset of technology, AI has its own subsets, one such being machine learning. [Machine learning](#) is where one can access data and learn from that data, potentially resulting in groundbreaking advancements in fraud detection, data and personal security, marketing, healthcare and countless other fields.

As more and more companies recognize the potential of machine learning, investment in this field is growing—and so is the demand for skilled professionals. Machine Learning jobs rank among the [top emerging jobs on LinkedIn](#), with almost 2,000 listings posted, most of them for lucrative job opportunities. In 2017, [the median salary for a machine learning engineer was \\$106,225](#). Jobs in this domain include; engineers who apply machine learning to specific problems, developers who develop systems and infrastructure that can apply Machine Learning to input datasets, researchers who find ways to improve algorithms and data scientists who mine and analyze data to create training systems to recognize patterns, to name a few. It's a hot market with plenty of potential for an exciting and well-paying career.

Watch this video to know more about Machine Learning.

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](#), 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 understanding 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](#). 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 other 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.

How to Ace Machine Learning Job Interviews

After reviewing these questions, you can see that there are various depths in which you may have to address the topic of machine learning. Based on your experience level, you may be asked to additionally demonstrate your skills in machine learning but this depends largely on the role you're pursuing.

However, the questions above should be able to help you qualify if you're ready for a job in the machine learning field. If some of these questions seem beyond your reach, gain a deeper understanding of AI and machine learning by obtaining [your certification in machine learning](#). Certification, alongside the knowledge and training it holds, also increases your hireability to potential employers. Finding your niche in the world of machine learning is up to you and the jobs are available for the qualified. Are you one of them?

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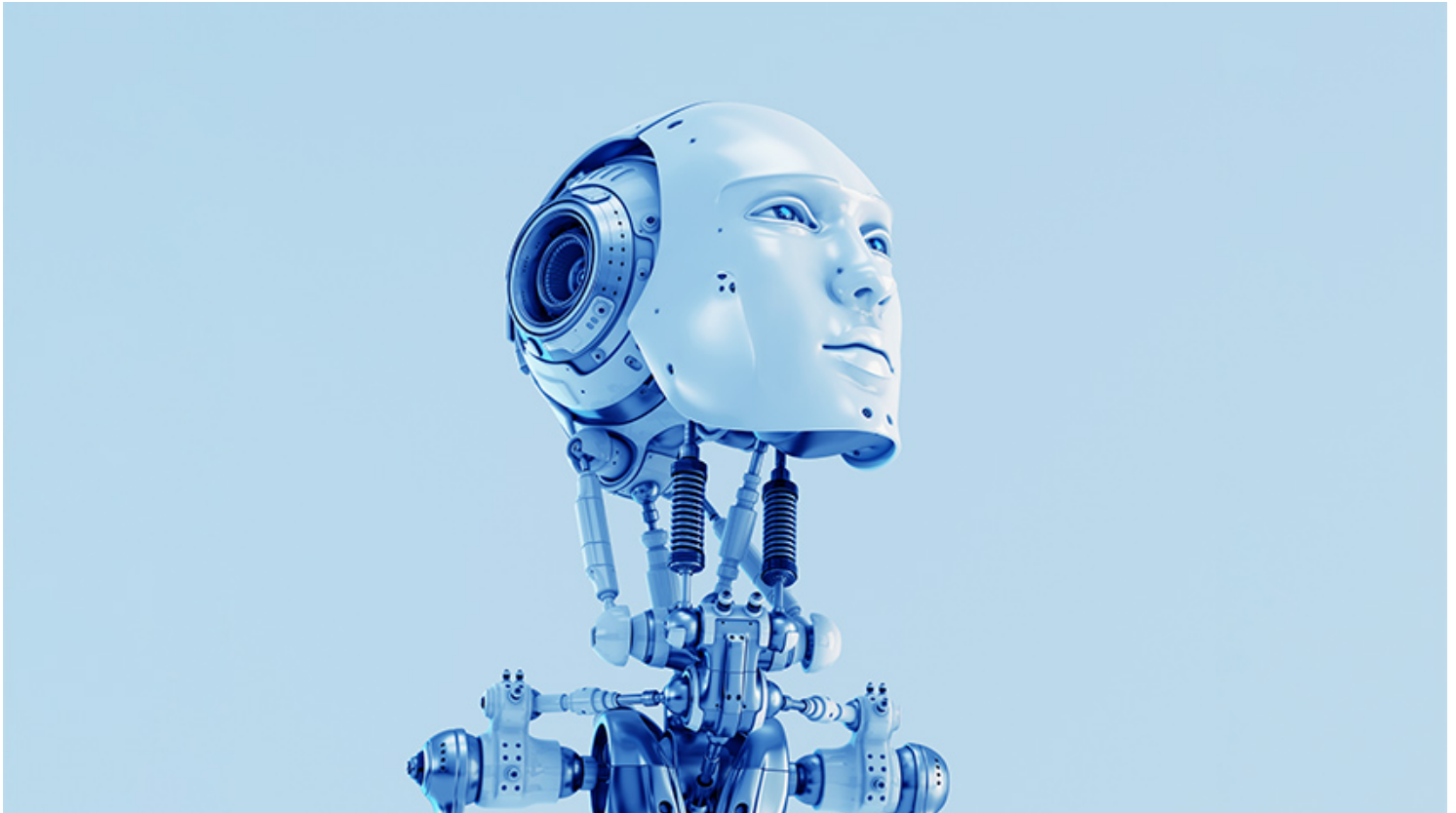
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Eshna writes on PMP, PRINCE2, ITIL, ITSM, & Ethical Hacking. She has done her Masters in Journalism and Mass Communication and is a Gold Medalist in the same. A voracious reader, she has penned several articles in leading national newspapers like TOI, HT, and The Telegraph. She loves travelling and photography.

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What Is Artificial Intelligence and Why Gain a Certification in This Domain



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[Artificial Intelligence](#) (AI) is currently the hottest buzzword in tech. And with good reason—the last few years have seen a number of techniques that have previously been in the realm of science fiction slowly transform into reality. Experts look at artificial intelligence as a factor of production which has the potential to introduce new sources of growth and change the way work is done across industries. According to the report [How AI Boosts Industry Profits and Innovations](#), AI is predicted to increase economic growth by an average of 1.7 percent across 16 industries by 2035. The report goes on to say that, by 2035, AI technologies could increase labor productivity by 40 percent or more, thereby doubling economic growth in 12 developed nations that continue to draw talented and experienced professionals to work in this domain.

This article provides an overview on AI, its most popular industry applications, potential career paths and how a certification can help you jumpstart your career in this fast-growing domain.

What is Artificial Intelligence?

Artificial Intelligence is a method of making a computer, a computer-controlled robot or a software think intelligently in a manner similar to the human mind. AI is accomplished by studying the patterns of the human brain and by analyzing the cognitive process. The outcome of these studies develops intelligent softwares and systems. Researchers extend the [goals of AI](#) to the following:

1. **Logical Reasoning:** AI programs enable computers to perform sophisticated tasks. On February 10, 1996, a computer called [Deep Blue](#), designed by IBM, won a game of chess against the former world champion, Garry Kasparov.
2. **Knowledge Representation:** [Smalltalk](#) is an object-oriented, dynamically typed, reflective programming language that was created as the language to underpin the “new world” of computing exemplified by “human-computer symbiosis.”
3. **Planning and Navigation:** The process enabling a computer to get from point A to point B. A prime example of this is [Google’s self-driving Toyota Prius](#).
4. **Natural Language Processing:** Set up computers that can understand and process language.
5. **Perception:** Use computers to interact with the world through sight, hearing, touch, and smell.
6. **Emergent Intelligence:** That is, intelligence that is not explicitly programmed, but emerges from the rest of the explicit AI features. The vision for this goal is to have machines exhibit emotional intelligence, moral reasoning and more.

Applications of Artificial Intelligence

Machines and computers affect the way we live and work. Top companies are constantly rolling out revolutionary changes to how we interact with machine-learning technology.

[DeepMind Technologies](#), a British artificial intelligence company, was acquired by Google in 2014. The company created a Neural Turing Machine, allowing computers to mimic the short-term memory of the human brain.

[Google's driverless cars](#) and [Tesla's Autopilot](#) features are the introductions of AI into the automotive sector. Elon Musk, the founder, and CEO of Tesla Motors has suggested via Twitter that [future Teslas](#) will have the ability to predict the destination that their owners are wanting to go to via learning their pattern of behavior using AI.

Furthermore, [Watson](#) a question-answering computer system developed by IBM is designed for use in the medical field. Watson suggests various kinds of treatment for patients based on their medical history and has proven to be very effective.

Most people, however, utilize more common applications of AI, such as virtual personal assistants in our smartphones. Siri, Cortana, and Google Assistant are some very commonly used digital assistants that are found in iOS, Windows and Android phones. These applications collect information, interpret what is being asked and then supply the answer via fetched data and each one gradually improves based on user preferences.

Reasons to Gain Artificial Intelligence Certification

Here are the top reasons why you should gain a certification in AI if you're looking to join this field full of potential:

1. Demand for Certified AI Professionals will Continue to Grow

One in five companies will be using [AI to make decisions in 2018](#). It will help companies offer customized solutions and instructions to employees in real-time. Therefore, a sharp increase in demand for professionals with skills in emerging technologies like AI will only grow.

2. New and Unconventional Career Paths

AI is expected to create 2.3 million jobs by 2020 according to a [recent report](#) from Gartner. The [Capgemini report](#) found that 83 percent of companies using AI say that the technology is leading to the creation of new jobs. Because of AI, new skill sets are required in the workforce, leading to new job opportunities. Some of the [top AI roles](#) include:

- **AI/machine learning researcher:** Research and identify improvements to machine learning algorithms.
- **AI software development, program management, and testing:** Develop systems and infrastructure that can apply machine learning to an input data set.
- **Data mining and analysis:** Investigate large data sources, often creating and training systems to recognize patterns.

- **Machine learning applications:** Apply machine learning or AI framework to a specific problem in a different domain. For example, applying machine learning to gesture recognition, ad analysis or fraud detection.

3. Improve Your Earning Potential

The average Artificial Intelligence engineer can earn \$135,000 per year. According to an article in [Fortune](#), many of the top tech enterprises are investing in hiring talent with AI knowledge. A certification in AI is a step in the right direction to enhance your earning potential and make you more marketable.

4. Higher Chances of an Interview

If you are looking to penetrate the AI industry, a certification like Simplilearn's [Artificial Intelligence Engineer](#) will help you reach the interview stage because you'll possess skills that many people in the market do not. Certification will help convince prospective employers that you have the right skills and expertise for a job and make you a valuable candidate.

Artificial Intelligence is emerging as the next big thing in the technology field. Organizations are adopting AI and budgeting for certified professionals in the field, thus the demand for trained and certified professionals in AI is increasing. As this new field continues to grow, it will have an impact on everyday life and lead to considerable implications for many industries.

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About the Author

Jeevan is a content marketer with close to two years of experience in content writing and copy editing. He is a musician and a writer who enjoys playing around with words.

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