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This artificial intelligence lesson provides basic and intermediate information about concepts of artificial intelligence. It is designed to help students and work professionals who are completely beginners. In this tutorial, our focus will be on artificial intelligence, if you want to learn more about machine learning, you can check out this tutorial for complete beginners tutorial Machine Learning. Through this artificial intelligence lesson of course, we look at different concepts like artificial intelligence sense, AI levels, why AI is important, it's the future of different programs, artificial intelligence, and more. Usually, to work in the field of AI, you need to have a lot of experience. So, we will also discuss various work profiles that are related to artificial intelligence and ultimately help you achieve relevant experience. You don't need to be from a specific background before joining the AI field because it is possible to learn and achieve the necessary skills. Although the terms Data Science, Artificial Intelligence (AI) and Machine Learning fall into the same area and are related, they have their own specific applications and meaning. Simply put, artificial intelligence aims to enable machines to pursue arguments by replicating human intelligence. Since the main purpose of AI processes is to train machines from experience, it is very important to get proper information and self-regulation. Table Artificial Intelligence TutorialWhat is artificial intelligence? The answer to this question will depend on who you ask. A layman with a short-term understanding of technology would link him to robots. If you ask a scientist about artificial intelligence AI, (s) he says it's a set of algorithms that can yield results without being explicitly specified to do. Both of these answers are right. So to summarize, Artificial Intelligence is: A smart entity created by humans. Being able to perform tasks wisely, it's not clear. Capable of thinking and acting rationally and humanely. In the nucleus of artificial intelligence, it is a branch of computer science that aims to create or replicate human intelligence in machines. But what makes the machine smart? Many AI systems are driven by machine learning and deep learning algorithms. AI is constantly evolving in what has been considered part of AI in the past can now only be viewed as a computer function. For example, a calculator can be considered part of an AI in the past. Now it is considered a simple feature. In addition, there are different levels of AI, let us understand these. Why is artificial intelligence important? The aim of artificial intelligence is to help human capabilities and help us make smart decisions with far-reaching consequences. From a technical point of view, this is the main objective of the PG. from a perspective, we can say that it can help people live a more meaningful life without hard work. AI can also help manage the complex internet of interconnected individuals, businesses, states and nations to act in a way that benefits all mankind. At the moment artificial intelligence is being shared by all the different tools and methods that have been invented by us over the last thousands of years – simplifying human efforts, and helping us make better decisions. Artificial intelligence is one of those works that will help us to continue to develop innovative tools and services that will exponentially change the way we lead our lives, hopefully eliminating disagreements, inequality and human suffering. We are still far from these kinds of results. But it may come around in the future. Artificial intelligence is currently used mainly by companies to improve the efficiency of their process, automate resource-heavy tasks, and make business forecasts based on data for us. As you can see, AI is significant to us in several ways. It creates new opportunities in the world, helps us improve our productivity, and more. The history of artificial intelligenceFrom the concept of my creatures was around a long time ago and has now found its way into many sectors such as AI education, automotive, banking and finance, AI healthcare, etc. Ancient Greeks had myths about robots, as Chinese and Egyptian engineers built vending machines. However, the beginning of modern AI was traced back to the time when classical philosophers tried to describe human thinking as a symbolic system. Between the 1940s and 50s, researchers from a handful of different fields discussed the possibility of creating an artificial brain. This led to an increase in the field of AI research, which was established as an academic discipline in 1956, at the Dartmouth College Conference in Hanover, New Hampshire. The word was coined by John McCarthy, who is now considered the father of artificial intelligence. Despite well-funded global efforts over many decades, scientists have found it very difficult to create intelligence in machines. Between the mid-1970s and the 1990s, scientists had to deal with a sharp shortage of AI research funding. This year was known as PG Winters. But by the end of the 1990s, American corporations were again interested in PG. In addition, the Japanese government also came up with plans to create a fifth-generation computer for AI progress. Finally, in 1997, IBM Deep Blue defeated the first computer to beat the world chess champion, Garry Kasparov. As AI and its technology continued in March - largely due to improvements in hardware, corporations and governments also began to successfully use their methods in other narrow areas. Over the past 15 years, Amazon, Google, Baidu, and many others have managed to leverage AI technology to a huge commercial advantage. Pg are included in many of our online services. Therefore, this technology has managed not only to play a role in each sector, but also to encourage a significant share market share in the stock market. Today, artificial intelligence is divided into subsumes namely artificial general intelligence, artificial narrow intelligence and artificial super intelligence, which we will discuss in detail in this article. We will also discuss the difference between AI and AGI. Levels of artificial intelligenceDright intelligence can be divided into three main levels: Artificial narrow intelligenceExial general intelligenceDividing super-intelligenceDficial Narrow Intelligence (ANI)Also known as narrow AI or weak AI, Artificial Narrow Intelligence is goal-oriented and is designed to perform singular tasks. Although these machines are considered intelligent, they operate within minimal limits, so called weak AI. It promotes human behavior based on certain parameters. Narrow PG uses NLP or natural language processing to perform tasks. This is evident in technologies such as chatbots and speech recognition systems such as Siri. With deep learning, you can personalize your user experience, such as virtual assistants, that store your data to improve your experience in the future. Examples of weak or narrow AI:Siri, Alexa, CortanaBMs WatsonSelf driving carsSound recognition softwareElection spam filters Prediction tools Artificial General Intelligence (AGI)Also known as strong AI intelligence or deep artificial intelligence, artificial general intelligence refers to the concept through which machines can imitate human intelligence while demonstrating the ability to apply their intelligence to solve problems. Scientists have not yet been able to achieve this level of intelligence. Significant research is needed before this level of intelligence is implemented. Scientists should find a way through which machines can become conscious through programming a set of cognitive abilities. Several features of deep AI are recognizedReksant hypothesis tests ImaginationAnalogyImplicationIt is difficult to predict whether strong AI will continue in advance or not in the near future, but with speech and facial recognition constantly showing progress, there is a small possibility that we can expect growth in this level of AI too. Artificial Super-Intelligence (ASI)Currently, super-intelligence is just a hypothetical concept. People think that in the future it may be possible to create such artificial intelligence, but in the current world it does not exist. Super intelligence can be known as the level at which the machine surpasses human capabilities and becomes self-aware. This concept has been a muse in several films, and science fiction novels in which robots can develop their feelings and emotions can overflow humanity itself. She could create emotions of her own, and be better than people in art, sports, mathematics, science and more. The ability of super-intelligence to make decisions would be greater than a person's ability to make decisions. The concept of artificial super-intelligence is still unknown to us, its consequences cannot be guessed, and its effects cannot yet be measured. Now let's understand the difference between weak AI and strong AI. Weak AIStrong Alt is a narrow application with limited scope. This is a broader application with a broader scope. This program has incredible human-level intelligence. It uses supervised and unsupervised learning to process data. It uses grouping and mapping to process data. Example: Siri, Alexa.Example: Advanced RoboticsApplications of Artificial Intelligence, The future intelligence programs today paved the way for several industries and areas. From games to health care, AI application has increased dramatically. Did you know that Google Maps apps and facial recognition, for example, on the iPhone all use AI technology to work? AI is around us and is part of our daily lives more than we know it. Here are some Artificial Intelligence.Best Applications of Artificial Intelligence programs for 2020. Oogle AI-powered predictions (Google Maps)Ride Sharing Program (Uber, Lyft) PG Autopilot on commercial flightsSpam filters EmailsPlagiarism checkers and toolsFace recognitionSearch recommendationsRead to the textfeaturesSmart personal assistants (Siri, Alexa)Fraud protection and preventionNow that we know these are areas where pg is applied. Let's understand them in more detail. Google has partnered with DeepMind to improve the accuracy of traffic forecasts. With historical traffic data and live data, they can accurately predict through AI technologies and machine learning algorithms. A smart personal assistant can perform tasks according to the commands we give. It's a software agent and can do tasks like sending messages, doing Google search, recording voice notes, sweeping conversations, and more. AI targetsSuti, you have seen what AI means, different levels of AI and its application. But what are the objectives of AI? What is the result that we aim to achieve through the AI? The overall objective would be to allow machines and computers to learn and function intelligently. Some of the other objectives of AI are as follows:1. Problem solving: Scientists have developed algorithms that have been able to simulate the step-by-step process that people use to solve a puzzle. In the late 1980s and 1990s, studies reached a stage where methods were developed to address incomplete or unclear information. However, complex problems require huge computing resources and memory power. Thus, finding effective problem-solving algorithms is one of the goals of artificial intelligence.2. Representation of knowledge: address problems that require comprehensive knowledge. Thus, knowledge representation is the main AI. Artificial intelligence refers to objects, characteristics, events, causes and effects, and much more. 3. Planning: One of the objectives of the AI should be to set sensible objectives and achieve them. The ability to predict how actions will affect changes and what choices are available. The AI agent will have to assess your environment and predict accordingly. That is why planning is important and can be considered an AI goal. 4. Learning: One of the basic concepts of AI, machine learning, is the study of computer algorithms that continue to improve over time through experience. There are different types of ML. The most commonly known types are unattended machine learning and supervised machine learning. To learn more about these concepts, you can read our blog about what ML means and how it works. 5. Social intelligence: Emotional computing is basically a study of systems that can interpret, recognize and process human efforts. It is a confluence of computer science, psychology and cognitive science. Social intelligence is another objective of AI, because it is important to understand these areas before creating algorithms. Thus, the overall objective of artificial intelligence is to develop technologies that could include the above objectives and create a smart machine that can help us work efficiently, make decisions faster and improve security. The demand for jobs in artificial intelligenceSupajoe artificial intelligence skills has more than doubled in the last three years, according to Indeed. Work in the field of AI has increased by 119%. The task of training the image processing algorithm can be completed in a few minutes today, and a few years ago the task would take several hours. When we compare skilled market specialists with the number of jobs available today, we can see a shortage of skilled professionals in the field of artificial intelligence. Bayesian Networking, Neural Networks, Informatics (including knowledge of programming languages), physics, robotics, computing and statistical concepts are some of the skills that one needs to know before deep diving into an AI career. If you are someone who wants to build a career in AI, you should know about various work roles. Let's look at the different roles of work in the world of AI and what skills you need to have for every job role. Read also: Artificial Intelligence Interview Questions 2020 1. Machine learning engineer If you are someone who comes from a background in data science or applied research, the role of machine learning engineer suits you. You need to show awareness of several programming languages, such as Python, Java. Understanding predictive patterns and being able to use Natural Language Processing to work with huge data sets will be useful. Familiar with software development Tools such as IntelliJ and Eclipse will help you continue your career as a machine learning engineer. You will be mainly responsible for the development and management of several machine learning projects, among other responsibilities. As an ML engineer, you will receive an annual average salary of \$114,856. Companies are looking for qualified professionals who have a master's degree in the related field and have extensive knowledge of machine learning concepts, Java, Python, and Scala. The requirements vary depending on the hiring company, but analytical skills and cloud apps are considered a plus point. 2. As a data scientist, your tasks include collecting, analyzing and interpreting large and complex data sets using machine learning and forecasting analysis tools. Data scientists are also responsible for developing algorithms that allow data to be collected and cleaned for further analysis and interpretation. The annual average salary of a data scientist is \$120,931, and the skills required are as follows: HiveHadoopMapReducePigSparkPythonScalaSQL Required skills may vary depending on the company, and depending on your experience level. Most hiring companies are looking for a master's degree or doctorate in data science or computer science. If you are a data scientist who wants to become an AI developer, the degree of advanced computer science proves to be useful. You must be able to understand non-structural data and have strong analytical and communication skills. These skills are very important because you will work with business leaders. 3. Business Intelligence Developer When you look at different AI work roles, it also includes the position of business intelligence (BI) developer. The aim of this role is to analyse complex data sets that help us identify business and market trends. BI developer earns annual average salary of \$92,278. BI developer is responsible for creating, modeling, and maintaining complex data on cloud-based data platforms. If you are interested in working as a BI developer, you need to have strong technical and analytical skills. Getting great communication skills is important because you'll work to communicate with colleagues who don't have technical knowledge. You should also show problem solving skills. BI creator is usually required to have a bachelor's degree in any relevant field, and work experience will also give you extra points. Certificates are highly desirable and are seen as additional quality. The skills required for BI developer include data mining, SQL queries, SQL Server Reporting Services, BI technologies, and data store design. 4. Research Scientist Scientist is one of the leading artificial intelligence careers. You should be an expert in various disciplines such as mathematics, deep learning, machine learning and computing statistics. Candidates must have knowledge of computer perception, graphic patterns, learning enhancement and NLP. Similar to data scientists, research scientists should have a master's or doctoral degree in computer science. The annual average salary is said to be \$99,809. Most companies are looking for someone who has a comprehensive understanding of parallel computing, distributed computing, benchmarking and machine learning. 5. Big Data Engineer/Architect Big Data Engineer/Architects has the best paid job among all the roles that fall into artificial intelligence. The annual average salary of a Big Data Engineer/Architect is \$151,307. They play a very important role in the development of an ecosystem that allows business systems to communicate with each other and compare data. Compared to data scientists, big data architects get tasks related to planning, designing and creating an efficient big data environment on platforms such as Spark and Hadoop. Companies typically look to hire individuals who showcase experiences in C++, Java, Python and Scala. Data mining, data visualization, and data transfer skills are added to the benefits. Another bonus would be a Doctorate in mathematics or any related informatics field. Advantages of artificial intelligenceJust as it is the case with many things in the world, AI has its pros and cons. Firstly, let us understand the advantages of artificial intelligence and how it has made our lives easier compared to previous times. Reduce human errorAvable 24x7Help in repetitive workDigital help Faster solutionsRation decision makerMedical programsEnational communicationElective Communicationlas a closer look at each of the above points. 1. Reduction of human errorAll decisions taken using the AA model shall be taken from previously collected information by applying a set of algorithms. This allows you to reduce errors, and the probability of accuracy increases with greater accuracy. If people perform any task, there is always a small chance that they can happen. Since we can make mistakes, it is better to use programs and algorithms through AI because they reduce the likelihood of errors. 2. Possible 24x7Ditive intelligence models are built to work 24/7 without any interruptions or boredom. Compared to the average person who can work six to eight hours a day, it is much more effective. People do not have the capacity to work for a longer period of time because we need rest and time to rejuvenate. Thus, AI is available 24/7 and improves performance on a larger scale. 3. Assisted repetitive workMult intelligence can productively automate everyday human tasks. This can help us become more creative - from sending a thank you post to decluttering or answering questions. This can also help us to check the documents. Repetitive tasks, such as food production in a restaurant or factory, can be ruined because people get tired or after a long period of work. AI can help us perform these repetitive tasks efficiently and without errors. 4. Digital assistanceTravel organisations that are highly advanced use digital assistants to communicate with users. This helps the organization save human resources costs. Digital assistants, such as Chatbots, are typically used on an organizational website to respond to user requests. It also provides a smooth operation interface and good user experience. Chatbots are a great example of the same. Read here to learn more about how to create AI Chatbot. 5. Faster solutions AI, along with other such technologies, can help machines make decisions faster than the average person. This helps you quickly get things done. This is because when making a decision, people tend to analyze factors through emotions rather than AI-driven machines that quickly produce programmed results. 6. The rational solution of MakerWe as human beings may have evolved for the most part technologically, but when it comes to decision-making, we still allow our emotions to take over. In certain situations, it is really important to take quick, effective and logical decisions without our emotions coming into the picture. AI-driven decision-making is controlled by AI algorithms, and therefore there are no opportunities for emotional inconsistencies. Rational decisions made with the help of the AA ensure that efficiency is not compromised, as well as increases the level of productivity of the organisation. 7. Medical applicationsIn between all other advantages of AI, one of the largest programs for its use in the field of medicine. Doctors can assess the health risks of their patients using AI-fed medical purposes. Radiosurgery is used to operate tumors so that it will not damage the surrounding tissues and cause any additional problems. Medical professionals have been trained to use AI surgery. They can also help effectively detect and monitor various neurological disorders and promote brain functions. 8. Improves securitas technology and continues in advance, is more likely to have people use it for unetic reasons such as fraud or identity theft. If used correctly and for the right reasons, AI can prove to be an excellent resource for improving the security of our organization. AI can be used to protect our data and finances. In the field of cybersecurity, the AI is implemented. It has changed our ability to protect our personal data from any cyber threats or any form of attack. Read on to learn about AI in cybersecurity and how it helps here. 9. Effective communication People from different parts of the world speak different languages, making it difficult to communicate with each other. When we look at the past, we see how interpreters would help people communicate with each other if the other person didn't understand the same language as us. Such if we use AI. Natural Natural Processing allows systems to translate words from one natural language to another, thus removing the mediator. One of the best examples of this is Google's translation, and how it has progressed over time. It now provides audio examples of how words/sentences should be pronounced. Thus, improve our accuracy and ability to communicate effectively. Disadvantages of artificial intelligenceNow that we have understood the advantages of artificial intelligence, let's look at a few flaws. Cost overrunsOverrunsHelp practical productsMany standards software developmentPotential for abuseVery dependent on machinesRequire supervisionLet to take a closer look at the shortcomings of AI. 1. Cost overruns in the AI-driven model operations are massively higher than software development. As a result, the resources needed are increasing at a much higher rate. As a result, the cost of transactions increases. 2. Dearth's talent for AI is still an area that is evolving. So, finding specialists who are equipped with all the necessary skills is not easy. There is a gap between the number of jobs that are in the workforce and skilled workers in this area. Hiring a person with all the necessary skills further increases the costs incurred by the organisation. 3. Lack of standards for software developmentDirect value of artificial intelligence determines collaboration when different AI systems together form a larger, more valuable application. However, the lack of standards in AI software development means that it is difficult for different systems to talk to each other. The development of artificial intelligence software in itself is slow and expensive due to which continues to act as an obstacle to the development of AI. 4. MisuseAI's potential can achieve great things and today has enormous market power. Unfortunately, with great power comes the potential for abuse. If the power of AI falls into the hands of a person with unethical motives, there is a higher probability of abuse. 5. It's very dependent on machinesPrograms such as Siri and Alexa have become part of our daily lives. We are very dependent on these programs and receive help from these programs, thereby reducing our creative abilities. We become very dependent on machines and lose our learning simple skills, so it becomes lazier. 6. Required maintenanceUsing use of AI algorithms has many advantages and is very effective. However, this also requires constant assistance and supervision. These algorithms can't work without our programming of them and check whether they work properly or not. One example is a Microsoft AI chat-bot named Tay. Tay was modeled on talking as a teenage girl to learn through online conversations. But since he was programmed to learn basic conversational skills and didn't know the difference between good and evil, he went ahead and tweeted very political and information on internet trolls. The future of artificial intelligenceWe have always been impressed by technological change. At the moment we are living among the greatest AI advances in our history. Artificial intelligence has become the largest net advancement in technology. This has not only affected the future of every industry, but has also acted as a driving force for new technologies such as big data, robotics and IoT. At the rate at which the AI has progressed, there is no doubt that it will continue to flourish in the future. So we can say that AI is a great field to enter from 2020. In view of the progress of artificial intelligence and its technologies, more qualified specialists will be needed in this area. An AI certificate will give you an advantage over other industry players. As facial recognition, AI healthcare, chat-bots continue to show growth, now would be the right time to work to build a successful AI career. Virtual assistants are already part of our daily lives without knowing. Self-driving cars tech giants like Tesla have shown us a glimpse of what the future will look like. There is so much more progress to be discovered, this is just the beginning. According to the World Economic Forum, 133 million people are affected by artificial intelligence by 2022. The future of AI is really bright. Simple artificial intelligence mini-projectFor moving to the project, I would suggest going through this machine learning tutorial if you are not familiar with machine learning. This would also help you with this project if you know about the logistics regression algorithm. Zoo Animal ClassificationIn this mini-project we will use different algorithms that fall into the field of artificial intelligence machine learning to classify animals in the zoo based on their characteristics. We are going to use this dataset from Kaggle, which consists of 101 animals from the zoo. There are 16 variables with various features to describe animals. Class 7 types: Mammals, birds, reptiles, fish, amphibians, Bug and Invertebrates. The purpose of this dataset is to be able to predict the classification of animals according to variables. You can also find information about the various attributes used in this dataset on the download page that you are linked here. import numpy as np import pandas as pd from sklearn.model_selection import train_test_split df = pd.read_csv ('/content/zoo.csv') df.head() Production: features.remove('class_type') features.remove('animal_name') X = df[features].values.values.astype(np.float32) Y = df.class_type.X_train, X_test, Y_train, Y_test = train_test_split(X, Y, test_size = 0.5, random_state = 0) from sklearn.linear_model import LogisticRegression model = LogisticRegression().model.fit(X_train, Y_train).print(training accuracy : , model.score(X_train, Y_train)) print(testing accuracy : , model.score(X_test, Y_test)) Output: Accuracy : 1.0 test accuracy: 0.9215686274509803 As you can see, the model is performed exceptionally well with 92% accuracy of test data. Now, if you are given attributes of any animal in the above dataset, you can classify it using the above model. FAQs related to artificial intelligence Will artificial intelligence reduce jobs in the future? AI is still evolving. In the field of artificial intelligence, there is ample scope for improvement and progress, and while there may be some upskilling needed to keep pace with changing trends, AI is unlikely to change or reduce jobs in the future. Indeed, gartner's study shows that AI-related jobs will reach two million new net jobs by 2025. The adoption of the AI will help facilitate the organization's tasks. To remain relevant in an ever-changing world, it is necessary to upskill and learn these new concepts. Building an AI system is a painstaking process of reverse engineering the human traits and capabilities of the machine, and using this computing prowess to surpass what we can. Artificial intelligence can be built through a set of different components and will act as a fusion: PhilosophyMathematicsEconomicsNeurosciencePsychologyComputer EngineeringControl Theory and CyberneticsLinguisticsHow artificial intelligence is used by robots? Artificial intelligence and robotics are generally considered to be two different things. AI involves programming intelligence, while robotics involves building physical robots. However, these two concepts are interlinked. Robotics uses AI techniques and algorithms, while AI bridges the gap between the two. These robots can be controlled by AI applications. Why is artificial intelligence important? From music recommendations, map directions, mobile banking to fraud prevention, artificial intelligence and other technologies have taken over. AI is important for many reasons. There are several advantages to AI, such as reducing human error, available in 24x7, assisted recurrent work, digital aids, faster solutions and more. What are the weak methods of AI? Weak AI is a narrow application with limited scope. It uses supervised and unsupervised learning to process data. Example: Siri, Alexa.What are AI affiliates? Artificial intelligence can be divided into mainly six branches. They are, Machine Learning, Neural Networks, Deep Learning, Computer Vision, Natural Language Processing, Cognitive Computing. This brings us to the end of the artificial intelligence lesson. Here is a free course on AIML that can help you make your funds much stronger. 1