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Examining the application of artificial intelligence in computers

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Abstract: Artificial intelligence was presented for the first time in 1956 by John McCarthy -an American scientist in the field of computer systems- at the Dartmouth conference. The issue of intelligence as a basic feature that causes individual differences between people has been noticed for a long time. The field of attention to the intelligence factor can be observed in different sciences. Artificial intelligence is a branch of computer science that is used to improve the performance of computer devices and the interaction between devices and humans. Artificial intelligence will change the way networks are managed and this is the change we need. Artificial intelligence makes network operations simpler, smarter, safer and faster. In other words, it can be said that AI helps us to manage our networks with the speed of a machine. The results of the tests showed that a person's verbal skill is his best mental ability. It is interesting that later verbal skill was recognized as one of the main factors of mental ability, and even today, the content of most intelligence tests is verbal material.

Keywords: *Artificial, Computer, Intelligence, Neural network, Technology.*

1. Introduction

Artificial intelligence is considered one of the branches of computer science whose goal is to build artificial intelligence systems that can perform a set of tasks with high quality. At the beginning of the emergence of artificial intelligence, the goal was to produce tools that could perform mathematical calculations. In recent decades, with the expansion of various researches about the way the human mind works in processing and understanding information and the effort to build systems similar to the human brain, the use of artificial intelligence is no longer limited to performing simple calculations Its great effect can be observed in all aspects of life. During the development of the digital computer in the 1940s, it has been shown that computers can be programmed to perform many difficult tasks, so that some programs perform certain tasks at a level of efficiency Humans are specialists in receipts. In other words, since computers or machines were invented, their ability to perform various tasks has increased exponentially. One of the main goals of artificial intelligence in the computer is to solve problems through the computer, because simulating or reconstructing the abilities of the human mind has been a part of scientists' research for years [1].

In according to John McCarthy, artificial intelligence is "the science and engineering of making intelligent machines, especially intelligent computer programs". Artificial intelligence is a way to make a computer think intelligently in the way that intelligent humans think. The operating system based on artificial intelligence includes kernel, shell and system services. The user interacts with the terminal for shell services. In fact, artificial intelligence services in the computer are components related to identity verification, authorization, scheduling, file management and reporting. This operating system will be useful for data modeling based on artificial intelligence, machine learning and deep learning. Data should be processed, analyzed and analyzed for training, testing and implementation of artificial

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intelligence models. Management and integration with different data sources will be easy in the operating system, because it is based on artificial intelligence [2].

Another point is that the important features of an operating system (from startup to shutdown) do not change just like a classic operating system: the code is executed from the boot disk and determines the boot record of the partition. This record locates specific code files while booting. These files are loaded for execution. After loading the files, a user-friendly interface is presented to the user. At this stage, the services are related to the primary artificial intelligence methods. This is where the artificial intelligence is defined in the computer and the boot sequence ensures the start of these services, to help the user in completing his tasks.

Artificial intelligence has been used in applied programs to solve specific problems throughout industry and academia. Since the development of the digital computer, it has been proven that computers can be programmed to do very complex tasks, such as solving mathematical problems or playing chess, with great skill by the way, the first step of using artificial intelligence in the computer has been taken. became However, despite the continuous advances in computer processing speed and memory capacity, there is still no program that can match the flexibility of humans in wider fields or in tasks that require daily knowledge [3-5].

On the other hand, some of the programs have reached the efficiency level of a specialized human in performing some specific tasks, and in a special way, they have shaped the use of artificial intelligence in computers, such as in various applications such as medical diagnosis search engines in computers and voice or handwriting recognition You can learn about artificial intelligence technology in computers. In fact, artificial intelligence in computers is a way to make machines that can think without the need for humans!

The operating system based on artificial intelligence can have features related to software management, hardware management and common system services. Its main difference from the classic operating system will be intelligence in system management. In fact, the operating system architecture has evolved from the old IBM Mainframe to Linux and macOS. In order to better understand the artificial intelligence in the computer, it is better to know how many things should be mentioned as the application of artificial intelligence in the computer for the development of the operating system based on artificial intelligence Neural networks, pattern recognition, forecasting and other features of artificial intelligence, which are used in this technique. In fact, new operating systems have digital assistants, translation services, voice recognition, user interaction, profile management, security scanning, and user reporting [6].

It has been shown that the system based on artificial intelligence can advise, train, help, show, extract, explain to the user while performing his tasks on the computer or mobile phone Head, interpret, predict, justify Slow down and suggest and name the use of artificial intelligence in the computer with several verbs. This assistant can manage programs, schedule meetings, implement changes, create search-based reports, and track social media. Also, access to social networks and user interaction with social networks in a secure manner is one of the features of artificial intelligence-based operating system in the computer. This operating system will have components for accessing content, media files, local files and the Internet from one application [7].

This operating system will be able to manage multimedia. Media can be received from the Internet, local file system, and the cloud from the media player. The media can be accessed through the cloud from any device such as a laptop, tablet, mobile phone and browser. In this section, to introduce the use of artificial intelligence in the computer, it must be clearly said that the computer operating system has high availability. This program will have desktop clients, access to online terminal and mobile application. The input methods can be sensory inputs, keyboard, mouse, tactile pad and other motion inputs and artificial intelligence is displayed on the computer through them. Therefore, considering the importance of artificial intelligence and examination in all fields, we are examining computer artificial intelligence [8]. In addition, it is possible to use artificial intelligence to solve some simple and complex problems, but in the beginning, some foundations for that must be determined.

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To solve any problem, you must determine:

1. Initial state and goal state.
2. Describe the problem area.
3. Find the path between the starting state and the goal state.
4. Search for the solution between the starting state and the goal state.

Problem state space:

1. knowledge base
2. find all parameters.
3. State all the value of parameters.
4. State the initial state and goal state.
5. Find all the rule of the problem.
6. Find the tree of the solution.[11]

Example:

You are given two jugs 4 gallon and 3 gallons neither has any measuring markers on it there is pump that can be used to full the jugs with water. How can exactly gate 2 gallon in 4-gallon jug and n gallon in 3-gallon jug [11], see figures 1 and 2.

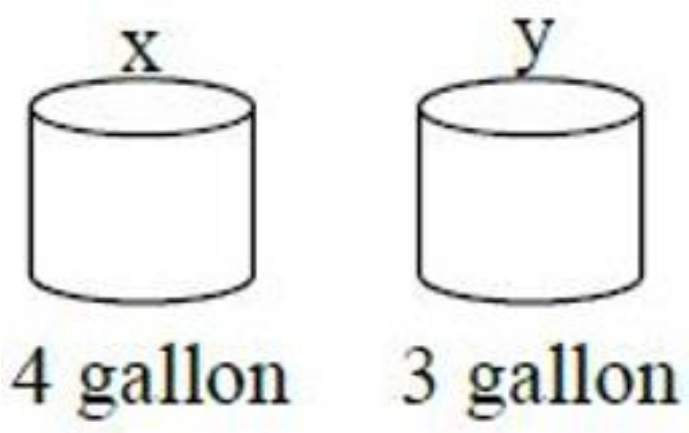

Figure 1.
Initial state.

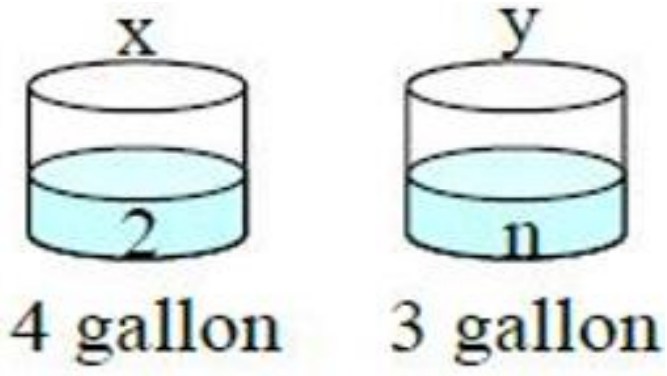

Figure 2.
Goal state.

Sol:

1. We identified variables: x, y.

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2. Define values: x=1,2,3,4 y=1,2,3.
3. initial state (0,0) goal state (2,n).
4. the rule of the problem:
   a. if x < 4 then (4,y) if y < 3 then (x,3). Fill
   b. if x > 0 then (0,y) if y > 0 then (x,0). discharge
   c. if x+y <=4 and y>0 then (x+y,0)
      if x+y <=3 and x>0 then (0,x+y)
   d. if x+y >4 and y>0 then (4,x+y-4)
      if x+y >3 and x>0 then (x+y-3,3)
5. The tree of the problem

When describing the problem within the knowledge base, there is only one transition at a time, which creates only one new case, either the cases that are similar to the previous cases or the initial case, you will be neglected [11].

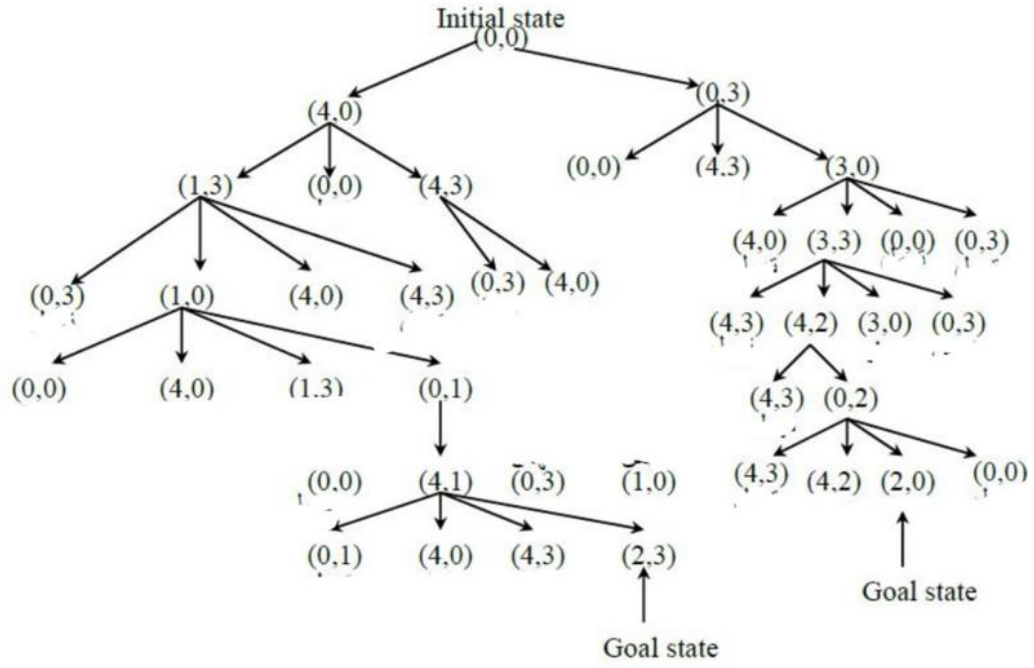

Figure 3.
The tree of the problem.

2. Literature Review

It is the process of making intelligent machines that use a large amount of data. This process enables machines to have logical thinking, sense, understanding, learning and action in an autonomous manner without direct instructions is used to build machines to be able to make a decision based on their own experiences. John McCarthy, who used the term artificial intelligence in 1956, defined it as the knowledge and engineering of building intelligent machines.

Khodabandeh Lu et al. (2019), artificial neural networks are largely inspired by natural learning systems in which a complex set of interconnected neurons are involved in learning. Different types One of the computational models under the general title of networks artificial nerves have been introduced, each of which can be used for a range of applications, and in each of them [9], it has been inspired by the capabilities and characteristics of the human brain. network Artificial nerve has been spread, which can

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be classified in the row of basic mathematical operations and as general and common tools, because there is less need for analysis, decision making, estimation, Vision, design, etc. It is possible to use artificial intelligence to perform tasks that traditionally require human information Classification, analysis and analysis, and drawing predictions from the data. It also includes the classification of data, learning from new data and their improvement over time [10].

3. Research Method

This article is based on a review study and completed based on observation and documentation. The first part was based on library studies and internet searches in reliable databases such as Scholar Google, Noormgas, SID Science Direct and advanced search in Google.

4. Results and Discussion

4.1. Artificial Intelligence and Computer Networks

Nowadays, the development of various technologies and devices that are used in computer networks increases the amount of data and also the number of human forces that are active in different organizations and that's it. The infrastructures that exist in this area have caused Controlling computer networks is much more difficult and complicated than in the past. This factor has also caused various organizations and businesses to look for ways to reduce the costs of managing computer networks and control these networks at the lowest possible cost. One of the best and most attractive ideas in this field is to get help from artificial intelligence to manage computer networks, which has attracted a lot of attention in the past year [11].

4.2. Important Applications of AI in Computer Networks

In recent years, artificial intelligence has managed to have an extraordinary effect on computer networks, and its effectiveness has been confirmed by all the specialists in this field today. One of the most important applications of artificial intelligence in computer networks is predicting user experience. In addition to this, machine learning techniques can be used to adjust the bandwidth of the network completely automatically, which can bring many advantages in this industry. The neural networks that are designed for this work are able to find the problems in the routers with the highest possible speed and inform it. In addition, it may be interesting for you to know that you can get help from ai to establish virtual networks. In general, AI is able to quickly identify anomalies in a computer network and inform it. In some cases, artificial intelligence models can even be used to eliminate these anomalies and problems in computer networks.

Practical examples of the use of artificial intelligence in computer networks. One of the most important reasons for using artificial intelligence in computer networks is that they can diagnose and report problems before the customer and even the employer, as well as the necessary actions to eliminate them Do these problems as well. With the use of data mining or data mining techniques, you can quickly identify the entities inside the network and remove various threats from inside the network. In addition, nowadays AI is used for the installation, deployment and troubleshooting of computer networks in many reputable universities in the world.

4.3. AI, the Evolution of Artificial Intelligence in Computer Networks

Artificial intelligence plays a very important role in controlling the complexity of computer networks. It is able to quickly discover new problems by examining the historical data stored in computer networks do them. This capability can be developed for very large computer networks so that they can perform more strategic and valuable tasks in computer networks. Today, many of the information stored in computer networks are stored in compressed form. For this reason, data mining techniques can be used to examine compressed data at the highest possible speed.

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4.4. AI Solutions to Solve Network Problems

Today, a virtual computer network assistant named Marvis has been designed to help control computer networks and the operations of Self-Driving Network is a device. This virtual assistant can provide a great user experience. Another thing you should know about artificial intelligence solutions for computer network problems is that machine learning algorithms are an experience. AIOps provide a highly efficient and optimized onboarding implementation. It makes it easier to check the health of computer networks, check the service expectations of computer networks and many other capabilities, including the most important methods that currently providing artificial intelligence and its techniques including machine learning and data mining to solve computer network problems.

4.5. Artificial Intelligence and Computer Network Security

Despite the large number of computer networks that exist today, there is always a need for a type of computer network that is aware of network threats, and its existence is felt more than ever. The ability to quickly identify devices that are members of computer networks and are at risk, and the appropriate response to these risks, the physical location of devices that are at risk, optimizing the user experience from a safe point of view are very important needs will be Artificial intelligence has succeeded in eliminating this need to a large extent. Today, computer networks that use artificial intelligence are very safe and can guarantee the security of users' information. The reason for this issue is the high speed of identifying threats by AI, which can provide a very good user experience.

4.6. Computer Network

Computer networks are a group of computers that are connected to each other with the aim of sharing file types, simplifying access to data types and programs, and establishing communication between computer systems. Networks not only exchange data with each other, but also share resources with each other. Communication between systems in Computer Network can be done through wire and physical or wireless and communication protocols.

5. Conclusion

Artificial intelligence is actually a simulation of human intelligence for a computer, and artificial intelligence is actually a machine programmed to think like a human and have the ability to imitate human behavior The emergence of artificial intelligence is a great opportunity to transform networks. The world has provided. This issue becomes more important especially when we consider that even now at the peak of the development of intelligent vehicles such as autonomous vehicles equipped with the Internet of Things and smart city systems that are always connected, we are the ones who will create a great transformation in the way of using networks, AI It changes the way of managing networks and this is the change we need.

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