

Artificial intelligence and life in 2030

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Human dreams and pursuits of artificial intelligence and intelligent machines can be traced back more than 3,000 years. In the 1930s and 1940s, two extremely important events occurred: the formalization of mathematical logic and the idea of intelligent computable (machine-thinking), establishing the concept of the relationship between computation and intelligence. Turing AM, known as the father of AI, founded the theory of automata in 1936, proposing a theoretical computer model, laying the foundation for electronic computer design, and promoting artificial intelligence, especially thinking. Machine research.

In the summer of 1956, it was co-sponsored by McCarthy J, Minsky ML, Lochester N and Shannon CE, and invited six other young scientists in Dartmouth, USA. Dartmouth) The University hosted a two-month, ten-person seminar to discuss the use of machines to simulate human intelligence issues, using the term "artificial intelligence" for the first time. This is the first artificial intelligence seminar in human history, marking the birth of the international artificial intelligence discipline, which has very important historical significance.

The terrible future dominated by the human artificial intelligence depicted in movies and novels shapes the imagination of the masses of human artificial intelligence, but these are fictitious. In reality, human artificial intelligence has changed our daily life, and it is all about improving human health, safety and productivity. With the deepening of artificial intelligence research, we are entering an era of artificial intelligence. Technology companies such as Apple, Facebook, Google, IBM and Microsoft are also investing heavily in the exploration of human artificial intelligence applications – they see it as the key to future growth.

1. The rise and early development of artificial intelligence

The development of artificial intelligence can be roughly divided into the following five stages:

The first stage: the rise and fall of artificial intelligence in the 1950s. After the concept of artificial intelligence was first proposed in 1956, a number of significant results have emerged, such as the machine theorem proving, the checkers program, the general problem solver, the LISP table processing language, and so on. However, due to the limited ability of reasoning and the failure of machine translation, artificial intelligence has entered a trough. This stage is characterized by a focus on problem solving methods, while ignoring the importance of knowledge.

The second stage: from the late 1960s to the 1970s, the emergence of expert systems led to a new upsurge in artificial intelligence research. The research and development of expert systems such as DENDRAL chemical mass spectrometry system, MYCIN disease diagnosis and treatment system, PROSPECTIOR prospecting system, and Hearsay-II speech understanding system have brought artificial intelligence to practical use. Also, in 1969, the International Joint Conferences on Artificial Intelligence (IJCAI) was established.

The third stage: In the 1980s, with the development of the fifth generation of computers, artificial intelligence has developed rapidly. Japan began the "fifth-generation computer development plan" in 1982, the "knowledge information processing computer system KIPS", the purpose of which is to make logical reasoning as fast as numerical operations. Although the

plan ultimately failed, its development formed a wave of research on artificial intelligence.

The fourth stage: in the late 1980s, the neural network developed rapidly. In 1987, the United States held its first international conference on neural networks, announcing the birth of this new discipline. Since then, countries' investment in neural networks has gradually increased, and neural networks have developed rapidly.

The fifth stage: In the 1990s, artificial intelligence emerged as a new research climax. Due to the development of network technology, especially Internet technology, artificial intelligence began to shift from a single intelligent subject research to distributed artificial intelligence research based on network environment. It not only solves the distributed problem solving based on the same target, but also studies the multi-objective problem solving of multiple intelligent subjects, and makes artificial intelligence more practical. In addition, due to the proposed Hopfield multi-layer neural network model, the research and application of artificial neural networks has shown a thriving scene.

2. Application of artificial intelligence in recent years

2.1 Net family.

All household appliances, lights, alarm systems, etc. can be networked and controlled via the Internet.

2.2 Google Video Glasses.

This glasses is equipped with a half-inch (1.3 cm) display that you can use to capture and share photos, video chats, check appointments, access maps and the web.

2.3 New smart TV.

You can easily and quickly search for TV shows, premium video-on-demand content, apps, social circles, and content on your local device, while users can create their own personalized TV experience based on custom recommendations. Using everyday language or casual gestures, you can send commands to the TV to search for content or manipulate the TV.

2.4 Digital assistant.

This is Siri, you may have seen it. Siri is the latest interface on Apple's iPhone 4S, and you've always wanted to have a digital assistant. You ask it to send a text message, or ask him where there is the best Hanbaobao store nearby, it will tell you quickly. It will also remind you not to forget to take the laundry at the laundry on your way home. You only need to give it a command by voice. Siri transcends past voice recognition, it understands natural sounds and does not require you to use keywords.

2.5 5G

Technology has been developing, but the most important is the launch of 5G networks. Although 4G is good, it is limited to daily activities, such as watching videos on Youtube or watching live videos. And 5G is almost 100 times faster than 4G, which makes the processing time of any image recognition, gesture recognition, face recognition or speech recognition much faster, thus achieving the interactive connection between devices. The arrival of the 5G era will provide the foundation for any artificial intelligence application.

3. Application of artificial intelligence in hotel management

3.1 Service Robot

Service robots can now be used in the hotel sector, including welcome boot robots, self-service robots, room emotional robots, autonomous transport robots, security patrol robots, merchandising robots, self-service baggage access robots, restaurant service robots, cleaning Service robots, etc. The application of service robots will significantly reduce the cost of hotel labor.

For example: a cleaning service robot can be used for floor cleaning. Through the floor autonomous navigation, according to the path planning, independently reach each floor, implement self-cleaning and automatic obstacle avoidance for each floor; use the water cleaning method to clean the ground, and the sewage is recycled in real time to ensure the ground is clean and tidy; automatic human body recognition and human-machine dialogue; Automatic charging and automatic addition of water, sewage; integration of charging and watering stations, sewage stations; to achieve ground cleaning functions. Room cleaning requires technical breakthroughs or room modifications.

In 2016, Hilton teamed up with IBM Watson to test the robot's front desk; Starwood's Aloft brand has begun to use the robot Botlr to deliver things to the rooms; InterContinental's Crowne Plaza also has similarly functioning robots. Some hotels of HNA Hotels Group began to use intelligent robots to provide services, and this intelligent robot service is more comprehensive, it can deliver items for guests' rooms, such as bath towels, hair dryers, children's products, room dining and so on. The robot can simply chat with the guests, say hello every day, discuss the weather, and lead the guests in need to go to the public area bathroom, conference room, gym and other places. In addition, the robot can also broadcast the hotel's various activities and promotions.

With the continuous breakthrough and application of service robots and artificial intelligence technology, the hotel industry, as a representative field of service labor intensive, will become a key industry for service robots.

2.2 Intelligent Security

Computer vision and biometric applications - face recognition and security monitoring. Computer vision and biometrics allow machines to more accurately identify people's identities and behaviors, helping to identify customers and security monitoring. The first is to monitor the camera, increase the portrait recognition function, identify suspicious people in advance, prompt suspicious behavior, and help identify dangerous personnel. Second, the internal camera can be used to increase the monitoring of employee suspicious behavior identification, record

and mark suspicious personnel, and remind the background monitors to further analyze and play a warning role. Thirdly, it is possible to add a portrait recognition camera in the core area of the hotel (such as data center computer room, guest room, etc.). Personnel entering and exiting must be entered through face recognition and document verification, and at the same time, portrait registration is performed for all incoming and outgoing personnel to prevent strangers from following in and out. Relevant areas, to achieve intelligent identification, to achieve the goal of security.

Combined with security patrol robots, daily patrols, security monitoring, consulting services and environmental monitoring. Through remote control, video surveillance, intelligent identification, audio call, video storage, status monitoring, task scheduling, remote communication and other functions and artificial services to effectively complement, repeat the repetitive, standardizable patrol, service and monitoring work, effectively reduce the work intensity, saving labor costs and improving the quality of hotel security services.

2.3 Smart Home

Smart home is the embodiment of materialization under the influence of the Internet. Compared with ordinary homes, smart home not only has traditional residential functions, but also has building, network communication, information appliances, equipment automation, and provides a full range of information interaction functions. Even save money for various energy costs.

As people become more accustomed to smart homes, consumers are increasingly demanding smart hotel accommodation experiences. Therefore, the hotel will add more intelligent elements to the rooms in the future to meet this demand and attract a new generation of consumers. More and more hotels will choose to connect their rooms through the Internet of Things to replicate the smart home experience that visitors enjoy at home.

Hilton has a Connected Room smart hotel project. Christopher Nassetta, CEO of the group, said: "We want to make our customers and guest rooms "understand each other" so that when they enter the room, they can use the smart phone in their hands to control all the facilities in the room."

Through an official app, Hilton allows hotel loyalty program members to freely control the lighting, temperature, and entertainment facilities of their rooms, such as TV content.

The Marriott (Marriott Hotel Group) also launched its own smart hotel project. Marriott hopes that smart rooms can further anticipate the specific needs of visitors and further optimize the accommodation experience.

Marriott's smart hotel rooms are divided into two types: newly built rooms and retrofits based on existing rooms. The newly built rooms feature a wide range of smart facilities, including smart photo frames, smart showers and more. Visitors can adjust the lighting, temperature, humidity, and interior decoration, and installed a sound control system, and a sensor system that can adjust the oxygen content of the air according to the number of indoors.

The smart rooms that have been transformed from existing guest rooms have relatively few types of facilities and no voice control system. Visitors can use the TV's remote control to manipulate the smart facilities in the room. At present, there are only three voice control, remote control and manual control modes, but in the future, the function of controlling the indoor facilities through the official Marriott application on the mobile phone will be introduced.

One thing in common between the Marriott Group and the Hilton Group's "smart rooms" is

to provide consumers with a more personal and smarter accommodation experience, but the details are quite different.

In addition to the Hilton Group and the Marriott Group, other hotel groups are also using a variety of new technologies and channels to enhance the occupancy experience. These include Four Seasons and Rosewood.

2.4 Intelligent marketing management

With reference to the application of artificial intelligence in the retail industry, the analysis of customers, targeting of target customers, capturing target customers, accurately pushing and analyzing the potential needs of target customers, realizing 360-degree portraits of each consumer and realizing Precision marketing.

At the same time, VR technology and artificial intelligence technology are used to realize an immersive interactive experience. VR interactive display before check-in and VR scene experience after check-in. Interactive display is convenient for consumers to choose, and the scene experience can be grafted with products, which helps to expand hotel consumption projects.

At present, Feifei has launched the VR selection process in the future hotel 2.0, but it must be a successful reservation before the customer can enter the selection interface.

In terms of scene experience, you can use the VR glasses to play games or watch in the room, or go to a specific VR space. The VR Travel Video Experience is available at Home Inns, where consumers can watch videos and experience local culture and scenery through VR glasses; InterContinental Hotels Group joins HTC to create exclusive VR space in some hotels in Beijing, Shanghai and Sanya, all staying Hotel guests can experience the service in the hotel's HTC Vive zone; the Seattle Hotel 1000 is equipped with a Golf VR and offers 50 world-famous golf courses for guests to choose from.

2.5 Intelligent Member Management

Establishing member files, collecting, transmitting and utilizing through intelligent devices are wearable devices. Whether it is glasses, watches, bracelets, wearable devices are equipped with sensors that can store many data of the human body, such as body temperature, breathing, heartbeat, and even expressions. Wait for one by one to provide a basic information reserve for subsequent transmission and utilization. After the data is collected and uploaded to the cloud, it can be aggregated into a large database. Once it reaches a certain scale, it can analyze the historical data and consumption habits of the members, and analyze the big data intelligently. The hotel can use the data to provide consumers with targeted data. Sexual, hardware-matched software and services that enhance and improve the consumer experience of members.

4. Current and future research directions of artificial intelligence

4.1 Expert system

The expert system is a knowledge system built on the knowledge of human experts. It is a program system with a large amount of knowledge and experience in a specific field. It

applies artificial intelligence technology, simulates the thinking process of human experts to solve problems, and solves various problems in the field, which can reach or exceed the level of human experts. At present, the expert system is the earliest, most active and most effective field in artificial intelligence research, and is widely used in medical diagnosis, geological exploration, cultural education and other aspects. It is a program system with corresponding knowledge and experience in a specific field. It applies artificial intelligence technology, simulates the thinking process of human experts to solve problems, solves various problems in the field, and reaches or approaches the level of experts.

4.2 Machine learning

Machine learning is the machine's own acquisition of knowledge. The study of machine learning mainly studies the mechanism of human learning, the process of human brain thinking; the method of machine learning; and the establishment of a specific task-based learning system. There are also problems in the field of robotics, from the optimal movement of the robot arm to the planning of the robot's target motion sequence. Therefore, the development of highly intelligent robots is an important research aspect.

4.3 pattern recognition

Pattern recognition is to study how to make the machine aware. It mainly studies the recognition of visual patterns and auditory patterns, such as identifying objects, terrain, images, fonts (such as signatures). It has a wide range of uses in all aspects of daily life as well as in the military. In recent years, the rapid development of the application of fuzzy mathematics mode and artificial neural network mode has gradually replaced the traditional identification method using statistical mode and structural mode. The special neural network method has made great progress in pattern recognition. Current pattern recognition focuses on graphics recognition and speech recognition. Pattern recognition aspects such as recognition of various prints and certain handwritten texts, techniques for identifying fingerprints, white blood cells, and cancer cells have entered a practical stage. Speech recognition mainly studies the classification of various speech signals. Speech recognition technology has developed rapidly in recent years, and commercial products such as scanners are now available.

4.4 Artificial neural network

In artificial neural networks, the processing of information is realized by the interaction between neurons. The storage of knowledge and information is represented by the distributed physical connection between network component interconnections. The learning and recognition of networks depends on and neurons. The dynamic evolution process of connection weights. Artificial neural networks may never replace the human brain, but he can help humans expand their knowledge and intelligent control of the outside world. Over the years, the research on artificial neural networks has made great progress and become a subject of information processing with a unique style. At present, the development trend of artificial neural networks has the following characteristics:

The new artificial neural network model generates very fast frequencies.

The improvement of the existing artificial neural network model is gratifying.

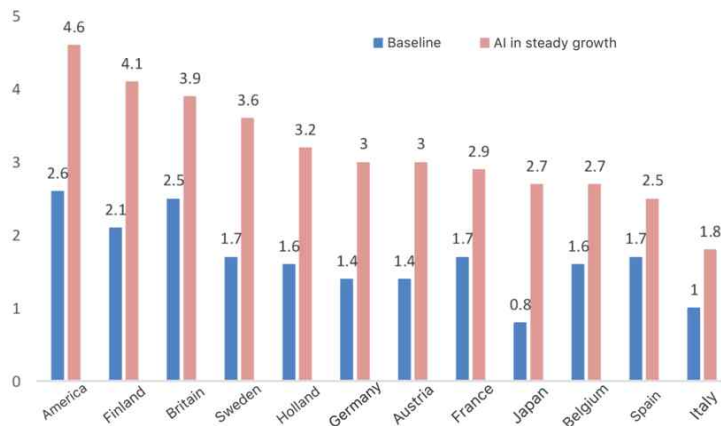
The combination of artificial neural network and other modern optimization calculation methods has increased. For example, combined with chaos theory, genetic + nerve, simulated annealing neural algorithm, etc.

4.5 Intelligent decision support system.

The decision support system belongs to the category of management science, and it has a very close relationship with "knowledge-intelligence". Expert systems have been successful in many aspects since the 1980s, applying artificial intelligence, especially intelligence and knowledge processing technology, to decision support systems, expanding the application scope of decision support systems and improving the ability of systems to solve problems. Become an intelligent decision support system.

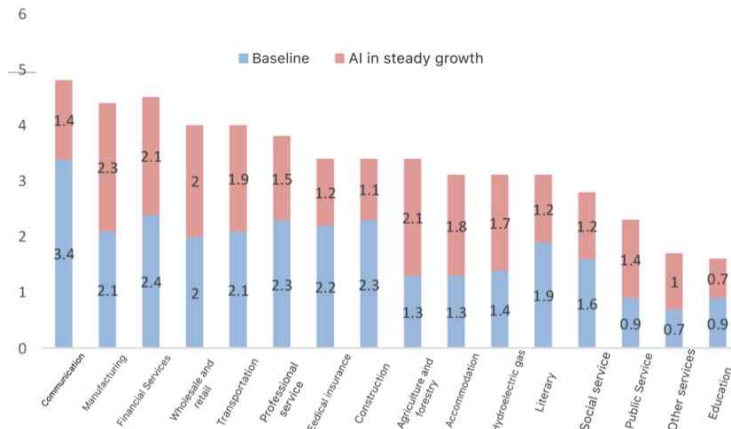
5. 2030, artificial intelligence will promote the global economy to achieve substantial growth

Experts studied the effects of AI (Artificial Intelligence) in 12 developed economies and revealed the creation of new relationships between people and machines by changing the nature of work. Artificial intelligence can increase labor productivity by 40%, enabling people to use time more efficiently. By 2035, artificial intelligence will double the annual economic growth rate of these 12 advanced economies.



It is predicted that by 2030, the accelerated development of artificial intelligence will increase global GDP by 14%, equivalent to \$15.7 trillion. Artificial intelligence will bring the most potential value to the medical, automotive and financial services industries. The economic benefits of artificial intelligence will be driven by:

Consumer demand has increased due to the provision of personalized and/or higher quality AI enhanced products and services. Governments and technology giants have actively seized opportunities for artificial intelligence development. At present, countries all



over the world are actively deploying around artificial intelligence related technologies. In addition, the United States is still seeking the right to speak in the artificial intelligence industry by strengthening international cooperation. For example, holding multilateral talks on artificial intelligence research and development policies, submitting international artificial intelligence policies to the United Nations, and promoting international standards for artificial intelligence. Artificial intelligence will become a great technological revolution that will have a huge impact on the future of mankind.

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