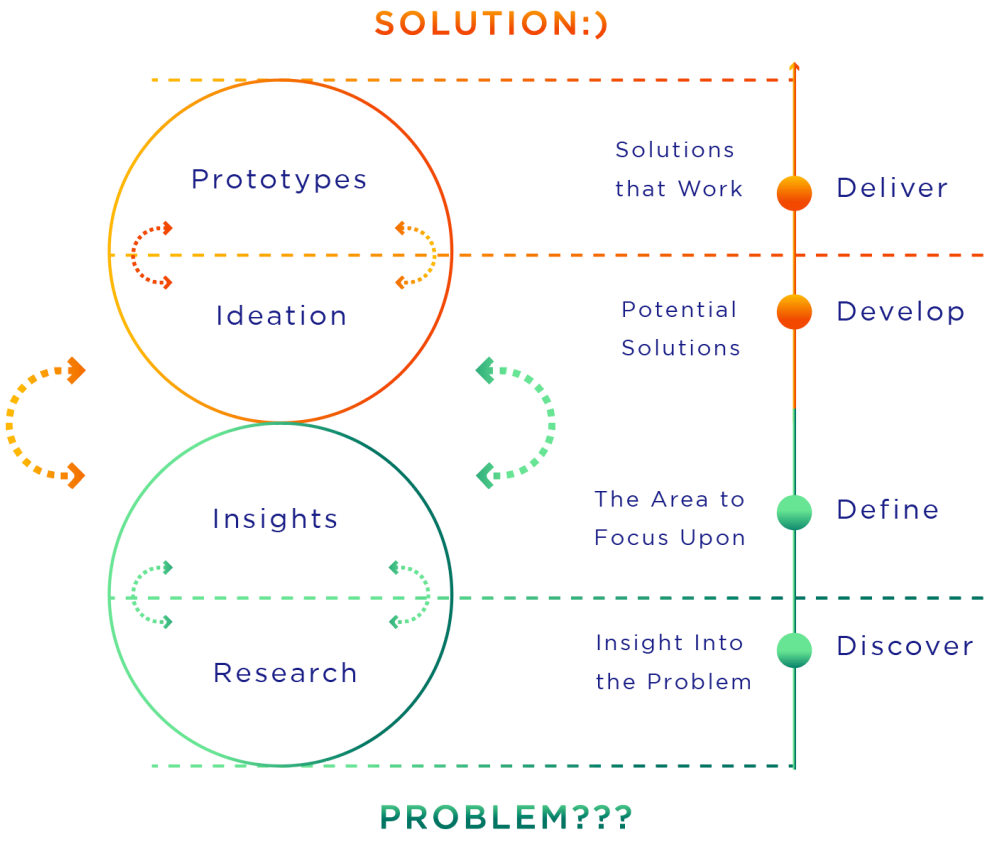
Funny AI Dog

Early childhood, Education, AI (Artificial Intelligence), Card game, Big Data, Children's picture book

Prima infanzia, Educazione, Intelligenza Artificiale, Gioco di carte, Big Data, Libro illustrato per bambini



The structure and design of the paper were analyzed by the double diamond method.

It will then be presented graphically.

This block diagram outlines how the different phases of the project are distributed. Obviously, the process is divided into three main parts, the concept of two green diamonds and the final orange development and final delivery of the diamond.

Two green diamonds are the basis of this paper. The first diamond explains the basic concepts of artificial intelligence, such as machine learning, deep learning, genetic algorithms, neural networks, etc., in the second chapter of this paper. One diamond mainly talks about the research and significance of the third chapter of preschool children's education. This chapter mainly discusses the research value of this paper and the characteristics of preschool children.

Definition, classification, development history and current status of artificial intelligence (Keywords: ai meaning, ai development history, singularity, Dartmouth meeting

Deep learning is a kind of neural network technology. As long as there is enough data, the neural network can automatically extract the characteristics of the data group.

The neural network is a network-like diagram in which the units that mimic the neurons of the neuron are connected, and the input signal is transmitted. The major change in the back-propagation algorithm of neural networks in the 1980s was a new learning method for auto-encoders proposed by Geoffrey Hinton et al. in 2006. One of the features of this method is that the layers of the neural network can be learned in stages. For example, let the first layer learn to output

the input information as it is, let the second layer learn to reproduce the input in the same way on the basis of the first layer, and the third layer will operate the same later. The neural network that makes it learn in stages, even with progressively progressive layers, still has a strong learning ability.

Deep learning is best at pattern recognition of data that cannot form symbols such as image data and waveform data, and inputting images through the input layer for phased learning. The construction of a commonly used neural network is a perceptual neural network in which all layers are connected together. However, if it is image recognition, it will be smoother to take a special connection method. This is called a convolutional neural network. With reference to the advancement of the human visual cortex, this was the neurocognitive machine proposed by Kunihiko Fukushima of the NHK Broadcasting Technology Institute. It is the prototype of deep learning. It is characterized by having a multi-scale intermediate layer that divides the input data into different sizes and extracts features. For example, entering an image of a car can be extracted from the style of the detail to the large structure and the overall outline. Using this property, deep learning is also used in Go A1. In 2016, Google Alphago (P0), which defeated professional players, entered the board as a whole and extracted features through various scales. In addition, it makes it possible to learn from the master's painting strokes, as well as to extract relevant features of animated characters.

The neural network is a repetition of the stereotype operation, and the part that can perform the parallel calculation is also one of its characteristics.

2.22 Machine learning (compared with supervised learning and unsupervised learning)

The "machine" of machine learning has the meaning of "learning of the machine" as opposed to "learning by humans."

The reason that machine learning is divided into supervised learning and unsupervised learning is that supervised learning provides "instruction data" to enable artificial intelligence to learn in one direction; unsupervised learning does not. The data can only rely on artificial intelligence to learn independently through the data collected by its own activities. There is a big difference between the two. In general, supervised learning requires a large amount of data, and unsupervised learning requires a good learning environment. For example, in the real world, the design of artificial intelligence unsupervised learning paper airplanes is feasible because paper airplanes actually have a flying environment. However, if the same paper plane is designed in the game, it is impossible to learn the actual flight because the game environment cannot simulate the air flow and other factors. The necessary premise for unsupervised learning is to have an integrated environment.

The Importance of Unsupervised Learning - The model of AI is divided into models that require a combination of example and standard solutions (called instruction signals) and models that do not require examples and answers. The experimental command signal learning is called supervised learning, and the unsupervised learning is called without using the command signal. There is a

problem with supervised learning: if there is no corresponding correct answer, there is no way to generate a command signal. If humans come up with standard answers, artificial intelligence will encounter bottlenecks, so unsupervised learning without instructions (without standard answers) is more important.

2.23 Reinforcement learning

Artificial intelligence in its own environment, while trying to find the most suitable action, is called reinforcement learning. From the point of view of the results of their own actions, intensive learning can also be seen as unsupervised learning.

The important thing in intensive learning is to first clearly express your actions and conditions, and to recognize what kind of actions you take under what circumstances and what kind of outcomes will occur in that environment. Then, learn the process of optimal action from it. for example.

Battle fighting game. Let players manipulated by humans play against players manipulated by artificial intelligence. In the beginning, artificial intelligence would be kicked and beam attacked without any rules. Remuneration is a certain reduction in the player's physical strength. Suppose the state is the distance from the player, the speed of yourself and the player. At first, due to the lack of rules in the move, almost no damage to the player, but in the course of repeated battles, occasionally cause damage to the player. Artificial intelligence will remember these. Through constant competition, artificial intelligence can learn what kind of action to take in what state, and can weaken the other's physical strength. This is

intensive learning. Reinforced learning is the method of selecting appropriate behaviors from the environment. It is one of the most practical methods in artificial intelligence learning. The scope of application is also very wide, especially when the learning object cannot be modeled.

2.24 Three major AI models (genetic algorithms, expert systems,

Genetic Algorithm (GA) is a representative AI model that simulates Darwin's theory of evolution, and is a neural network and expert system called the three major AIs.

Darwin's theory of evolution (the creature adapts to the environment, leaving only the outstanding individuals as descendants, and the inferior individuals are eliminated. In addition, the individual will suddenly mutate and may become a very good individual. The creature is in this iterative process In the evolution.)

"Excellent individual = good answer", using evolutionary methods to find the optimal solution, this is the genetic algorithm.
The best thing about genetic algorithms is finding the best answer.

The principle of genetic algorithm is to imitate the principle of genetics. First prepare a genetic factor containing several values. In the language of programming, genetic factors are just numerical arrangements. However, these

values assume their respective roles in the performance space. For example, in the case of RPG (Role-Playing Game), the first value is physical strength, the second is magic, the third is the strength of the force, the fourth is the speed of the run, and the fifth is the bounce force. Become the set value of the character in the game. For example, there are many artificial intelligence characters in the game map, so that these characters continue to fight. In this case, the winner of the high defeat rate, the genetic factor is excellent. Therefore, after a certain period of time, the individuals who have the genetic factors are gathered together to carry out the intersection of the genetic factors. Crossing refers to taking two genetic factors and cutting them to form a new combination. This will result in new genetic factors. It is based on the development of excellent genetic factors by excellent genetic factors. Let the excellent genetic factors cross and slowly get closer to the correct answer. As mentioned above, the genetic algorithm finds an algorithm suitable for the solution (genetic factor) from the huge exploration space of multiple elements (the space of the set genetic factors). Because it allows character characters and the like to evolve, it is also called an evolutionary algorithm.

expert system

The expert system is one of the three major Ai, and it can also be said to be Ai made by human "thinking" as a model. "If you are ×××, please △△△ otherwise please ⊙OO°, it is artificial intelligence that builds knowledge with such a rule group. For foreseeable problems, many countermeasures are prepared in

advance, so the professional field is often used. Knowledge, so called the expert system.

such as:

Mouth question: Which of the following is the main symptom?

Answer: 1. fever 2. runny nose 3. cough

Oral Rule 1: If it is fever, it can be diagnosed as food poisoning

Oral Rule 2: If you have a runny nose, you can diagnose a cold.

Oral Rule 3: If coughing, it can be diagnosed as tuberculosis.

If you choose "Answer 2: Runny nose", then it meets rule 2, so it will be diagnosed as "just a cold."

Expert systems will be used in many applications in the real world, especially for disease diagnosis. Unlike other Ai, the expert system is not a system for learning by itself. Experts are prepared to think about the status information and corresponding processing methods, judgments and predictions. The expert system only judges which situation the user's needs meet, and the more rules that are judged and envisioned, the more correct the judgment. On the contrary, as long as there is one ambiguity, it is possible to make a mistake. In addition, if the rules are added too much, it will also break the integration between the rules and set the rules with the help of experts. Even if the rules are set correctly, there is still no knowledge beyond the experts.

2.3 Big data and predictive artificial intelligence

Keywords: 1. Data mining, 2. Collaborative Filtering, 3. Search algorithm, 4. Best-first search, 5. Cloud artificial intelligence

2.31. (Data Mining)

Through data analysis technology, the hidden sensibility that can be read from a certain degree of data collection is known to the world. This process is called data mining. Data mining is a traditional field of artificial intelligence. Especially with the development of the Internet, it has become more and more concerned. Many people publish information on the Internet, upload photos, videos and music, and massive information is continuously accumulated. The technical needs are constantly rising.

Take a nationwide chain of clothing stores as an example. When and what kind of clothes are bought by customers, the next season's product strategy can be established from these data.

In the era when everything can be solved online through a computer, data can be easily stored and stored everywhere. Data mining is a necessary technology to extract information that is intuitively incomprehensible from these data. There are even companies specializing in data processing. In addition, for example, a free

public database, or a paid database provided by the enterprise, there are various analytical tools available on the market.

2.32 Collaborative Filtering

2.33 Search algorithm

The search algorithm refers to a program that finds specified data from the given data. For example, find the largest number from the given 10 numbers, or find the height of A from the data of the combination of name and height.

Search is the basis of the program. For the program, the data is something like the body. It can also be said that the program will only run if it depends on the data. Moreover, for artificial intelligence, search is also its basic ability. Why do you say this? For us humans, as long as we talk about "apple", we can automatically search for memories of "apple" from memory. By the same token, for artificial intelligence, recalling the given words is its basic ability. In order to use your knowledge, search is necessary.

Then, such search algorithms need to think in the form and combination of data. For example, taking the values and order given as an example, if each time is

arranged in descending order, then the largest data is usually placed at one end. In addition, when a lot of data is given, it is stored in tree data, and is divided into two binary trees and four quadtrees. Making the data geometrically constructed makes searching easier.

2.34 Best- first Search

The efficiency of the search algorithm is determined by how the data is searched in order. If you don't care about efficiency, just like looking for something in a messy room without a clue, it will make random choices. However, if the amount of data is large, it will be troublesome to do so. Therefore, both the breadth-first search and the depth-first search can be employed. Think about the data in a tree structure. The depth-first search first retrieves the data near the data. When searching for a piece of data, it also performs a deep search for the data connected to the data. That is to say, the data that has not been searched for connected with the searched data will continue to search from the original starting node to the farther node. On the other hand, breadth-first search is to retrieve all the data around the data, and then further search for the surrounding data connected to the surrounding data. That is to say, with the data as the center, the data is retrieved in a concentric manner.

In the case of a depth-first search, the depth of the initial data is prioritized; if it is

a breadth-first search, the shallowness of the initial data is prioritized.

The search algorithm is the basis of the through-type sequence and the artificial only, and is also typical of the symbolic algorithm for processing data. Using programs to search for data, humans recall in the brain, artificial intelligence to recall, and often think about the relationship between the three, is the basis for comparing and considering machines, artificial intelligence, and human intelligence.

2.35 Cloud artificial intelligence

2.4 Social application of artificial intelligence

2.41 IBM Watson

IBM Watson (hereafter referred to as "Watson") is an artificial intelligence developed by IBM Corporation for natural language specialization. Watson learns language and language related content from corpus in natural language such as Wikipedia.

The relevant content mentioned here refers to the frequency at which the two words appear in the same article at the same time, that is, the probability. When this is used as a database, as a requirement to enter a certain word, the words closely related to that word will be listed together with the evaluation value. For

example, when the word "Apple" is input, words such as "red", "round", "delicious", "aomori" associated with "Apple" are output in the order of evaluation values. It is the American guessing program "Jeopady!" that fully exploits this ability. The rule of Jeopardy! is that the moderator describes the definition of a word, and the guest answers the word according to the definition. It can be said that this is the most suitable form for Watson. Watson won two famous champions and became famous. In addition, in order to allow Watson to run stably, the program also moved the recording site to IBM. Watson is a model of a front-end (client) that uses an overwhelming natural language search capability as a generic back-end (server).

For example, sound recognition, noise processing, and information abstraction, etc., the front end sends a search request to the back end by sucking information, waiting for an answer. Then, the resulting answer is output according to the service conditions to construct such a program. Its flexibility is the cornerstone for general-purpose services.

2.42 Alphago

2.5 Chapter II Summary (Relationship Diagram)

The essence of artificial intelligence is based on a large number of data to build models for application. Therefore, more data plus faster performance and a more optimized algorithm is equivalent to stronger intelligence.

From the global total data volume in 2009-2020, it is 40 times faster, and the cost per million transistors is down at 99%. Therefore, artificial intelligence is welcoming new industrial outbreaks. The capital of academic research and industry development is very active. According to statistics, in 2018, the global artificial intelligence market is close to 47 billion US dollars, with a compound annual growth rate of 55.1%.

In this large context,

it is better to cultivate a new generation of artificial intelligence aborigines, and I will do my best to this end

.3. EXPLORING

Wang Kaifeng, CEO of "Future Factory", believes that AI Education will gradually become popular in the future. According to the growth rate of the past five years, the artificial intelligence industry worldwide will maintain an average annual growth rate of 55% in the next five years. In addition, although China is not the birthplace of artificial intelligence research, it has followed the trend of industry growth, and the number of related patents has surpassed the United States in 2012, becoming the world's number one. Therefore, we are extremely confident in the development of artificial intelligence in the Chinese market.

3.1 Talents needed for artificial intelligence

We must understand the characteristics of artificial intelligence and the work they are good at, prepare to retreat from some areas, and engage in competition with artificial intelligence - both cooperation and competition. Artificial intelligence reduces the need for junior positions, and repetitive, standardized jobs will disappear on a large scale. We have no choice but to prepare for giving up these jobs. In the industrial field, artificial intelligence has lower production costs, higher efficiency, and better product quality. Many traditional people need a lot of work, and now only a few workers are needed. In the service industry, a large number of people and people will simply communicate with each other, which will lead to the disappearance of many service positions, such as waiters in restaurants and supermarkets.

Gartner, the world's most authoritative IT research and consulting firm, said that around 2020, 85% of customer service will be done by artificial intelligence, and chatbots are used to solve many repetitive problems. According to McKinsey's survey, the probability of credit work, accounting and auditing work, legal assistants and junior lawyers, taxi drivers, security guards, etc. being replaced by more than 80%. In the 1990s, with ATMs spread across US cities and suburbs, the US banking community eliminated 179,000 cashiers for this purpose. The wave of financial automation is spreading to the accounting field. The artificial intelligence Smacc can automate the entire accounting process. You only need to hand in the original documents, and then the rest of the transaction artificial intelligence will

help you, including checking all your financial records. The popularity of this technology is likely to cause tens of millions of accounting practitioners around the world to lose their jobs.

Most of the administrative work in the future will also be replaced by automation. Betty is an extremely intelligent robot that has shown great practicality and effectiveness. She greets customers and colleagues, tracks employee time and overtime, organizes stored office materials, and knows who has taken a small stapler from someone else's desk. Brainwork that simply requires compiling the task content into standardized steps or making decisions based on formatted data will be completely replaced by intelligent machines. For example, financial companies in the United States are using the artificial intelligence of the natural language processing system to handle overloaded compliance work, which proves that they strictly abide by the laws and regulations issued by the government regulatory authorities, including possible money laundering transactions and sanctions. Continuous monitoring of transactions, billing fraud, etc., as well as KYC's future "people who choose a compliance profession, the future is bright."

For example, in the field of radiology, Enlitic's artificial intelligence technology makes practitioners even more powerful and makes ordinary doctors an expert. Technology has not made them unemployed, but has improved their ability.

Kevin Kelly believes: "In the future, your salary will depend on whether you can

cooperate with the robot. 90% of the colleagues will be invisible machines. Without them, most of your work will not be completed."

With the deepening of cooperation, robots will even become friends of humanity. For example, the provider of the bomb disposal robot Packbot often receives the soldier's request for repair. The soldiers refused iRobot to replace a new robot for them because they had a hard time with the original robot. They didn't want the robot comrades to "die."

In the era of artificial intelligence, in addition to wisely retreating in uncompetitive areas, the main countermeasures for human workers are "competition": human beings must use robots as partners, and combine human intelligence with machine intelligence to achieve the most Strong competitiveness, create new products and services; at the same time, we must have a sense of competition and give full play to the unique advantages of mankind. Therefore, the concept of artificial intelligence should be taken from the children, so that this generation of children become the aborigines of the artificial intelligence era, let the children understand the most important concepts of artificial intelligence earlier.

3.2 The concept of AICQ

The industrial age relies on IQ (intellectual quotient), the information age wins in EQ (emotional quotient), and the artificial intelligence era requires AICQ (Artificial

Intelligence Cooperation Quotient). The quality of labor required in the era of artificial intelligence is summarized as a "three-layer pyramid" model, IQ is located at the bottom of the pyramid, EQ is located in the middle of the pyramid, and AICQ is at the top of the pyramid.

Human intelligence is mainly embodied in reasoning, planning, problem solving, abstract thinking, understanding complex thoughts, learning quickly, and learning from experience. Logical thinking and learning ability are the key to intelligence.

The industrial age is a great era for mankind to conquer nature and change the world. To improve the efficiency of dealing with the relationship between man and things, you must have considerable IQ. The average IQ of ordinary people is 100, and the average IQ of American doctors in physics is 140. The IQ of scientists is even higher. Studies have shown that Newton's IQ is as high as 190, Galileo is 185, Kepler is 175, Darwin is 165, and Copernicus is 160.

Even if you don't engage in scientific research, you should have a certain scientific and cultural knowledge when you enter a modern factory to be an ordinary worker, because illiterate cannot effectively deal with the relationship between machines and raw materials. In the process of establishing a modern compulsory education system, the concept of IQ was raised because the French government had established a special committee to investigate the situation of children whose intelligence was below normal. In 1905, the famous Binai-Simon intelligence test was invented. Through the 10-year-old intelligence test, the "intellectual age" is 10 years old. If his physical age is 8 years old, 10 is divided by 8 is 1.25, and

multiplied by 100, his IQ is 125.

Lewis Temman, a psychologist at Stanford University in the United States, divides IQ into many levels. Those with IQ above 140, more than 99.6%, belong to genius or near genius; 120 to 140 belong to super intelligence; 110 to 119 belong to high IQ; 90 to 109 belong to medium IQ; 80 to 89 belong to low IQ; 70~ 79 is a lack of intelligence; below 70 is mentally retarded. Terman conducted an IQ test on 1,000 children and found that most people scored between 90 and 109, which belonged to medium IQ, and the IQ was extremely high or very low.

IQ is the cornerstone of success in modern society. For example, the dropout rate of white students with moderate intelligence in the United States is only 6%, while the dropout rate for stupid students and very stupid students is 35% and 55% respectively; the ratio of 5% of white women with the lowest IQ in the US, the ratio of extramarital children It is six times higher than the highest 5% of IQ; the average IQ of American criminals is 92, which is 8 points lower than the per capita IQ. Therefore, in the United States, college admissions, military recruitment, corporate recruitment, and even rugby union sea election professional players must conduct IQ tests.

In the era of artificial intelligence, human beings still have to deal with the relationship between "people and things". Therefore, IQ is at the bottom of the "three-tiered pyramid" and is the basis for a person's success.

After the Second World War, the United States took the lead in entering the information age from the industrial age, so there was a higher demand for the

quality of the workforce. Harvard University psychologist Howard Gardner proposed the "multiple intelligence theory" in 1983. Traditional intelligence theory believes that language ability and mathematical logic ability are the core of intelligence. Mathematics and language have become the core of school education. Gardner believes that this is not the whole of human intelligence.

He proposed that humans have at least eight aspects of intelligence, including language intelligence, logical mathematical intelligence, visual space intelligence, body kinesthetic intelligence, music intelligence, interpersonal intelligence, self-knowledge intelligence, and natural observation intelligence. For example, architects, painters and sculptors have strong visual space intelligence, and athletes and ballerinas have stronger body kinesthetic intelligence.

As mentioned above, linguistic intelligence and logical mathematical intelligence belong to the category of intelligence. Among the other six intelligences, interpersonal intelligence and self-knowledge introspection intelligence have strong universal significance in the information age, and have been continuously researched and promoted.

In 1990, American psychologists John Meyer and Peter Saloway proposed a comparative system of emotional intelligence theory. In 1995, Daniel Gorman, then a science journalist for The New York Times, published the book Emotional Intelligence: Why Emotional Intelligence Is More Important than IQ, which sparked a global upsurge in emotional intelligence research and discussion. In 2002,

UNESCO issued the ten basic principles for implementing SEL (Social and Emotional Learning) to the Ministry of Education in 140 countries around the world, and began to promote SEL on a global scale. Emotional intelligence has become the basic education content of many countries.

Gorman and other researchers believe that emotional intelligence is composed of five characteristics, including self-awareness, controlling emotions, self-motivation, recognizing other people's emotions and dealing with each other.

If IQ is dealing with the relationship between "people and things", then emotional intelligence is the relationship between "people and people", including the relationship between people and others, and the relationship between people and themselves, such as "self-awareness," Control emotions and self-motivation."

Then the question comes, why is Emotional Intelligence Theory and EQ Education popular in the information age? This is because the importance of human beings has been comprehensively improved in the information age.

Daniel Bell, a professor at Harvard University and a well-known sociologist, called the information society a post-industrial society. He compared industrial society with post-industrial society and pointed out that "if industrial society is based on machine technology, then post-industrial society is formed by knowledge

technology. If capital and labor are the main structural features of industrial society, then information and knowledge It is the main structural feature of the post-industrial society."

In the information age, most of the workforce is no longer engaged in agriculture or manufacturing, but in industries such as trade, finance, health care, academic research, education, and management. In addition, in the information age, excess capacity, channel diversity, and information The symmetry makes the consumer grasp the initiative and truly becomes God. In terms of Internet thinking, it is "user is king." Knowledge workers must carefully understand the user's mind and learn to interact effectively with the user.

It is necessary to deal with the relationship with the members of the organization, but also to deal with the relationship with the user, so high emotional intelligence has become a necessity in the information age.

In addition, knowledge workers have to deal with their relationship with themselves. In a knowledge-based organization, everyone is a CEO. Knowledge workers must be good at using their strengths, value their contribution to the outside world, and work consciously for results. “Self-awareness, control of emotions and self-motivation” is therefore indispensable, which is another important meaning of high emotional intelligence.

Daniel Gorman summed up in the book "Emotional Intelligence: Why Emotional Intelligence Is More Important than IQ": "People with high IQ and high emotional intelligence are smug; people with low IQ and high emotional intelligence, and noble people help; IQ is high, EQ People who are not tall, who have no talents; those who are not high in IQ and who are not high in emotional intelligence, have nothing to do."

Artificial intelligence is high in IQ and low in emotional intelligence. It is a very important competitive advantage in the future society to be good at dealing with the relationship between people and people. Therefore, the emotional intelligence is located in the middle of the "three-tier pyramid", which is a necessary condition for a person's success.

The quality requirements of workers in the era of artificial intelligence will be further improved. Because in this era, not only will the competition between people continue to exist, but the competition between people and smart machines will also surface.

Ma Ping, a writer who works in online media on the Internet, feels that in the Internet era, in terms of media work, people who are good at using search engines and those who don't use search engines are completely two species, and their efficiency is very different. In the era of artificial intelligence, people with high AIQ and people with low AIQ will also become two different species, and their future

and destiny will be very different. Therefore, AIQ is at the top of the “three-tiered pyramid” and is a key condition for a person's success in the era of artificial intelligence.

The educational method corresponding to the "three-layer pyramid" quality model, I made a more comprehensive discussion in the next article "The Ten Major Programs of the AI Education Revolution".

3.3 The significance of artificial intelligence education for preschool children.

The change of learning styles of preschool children in the era of artificial intelligence is closely related to the learning of children's life through Internet-based new education.

"Internet + education" is not just the application of the Internet and mobile Internet technology in education, nor is it not only the education Internet technology to establish various education and learning platforms; but the deep integration of the Internet, mobile Internet and education, is to promote educational progress. Strategic and holistic educational changes in efficiency, organizational change, and innovation in education and productivity.

In terms of the way children learn in preschool, traditional early childhood learning

includes observational learning, operational learning, language comprehension learning, and social learning. However, under the guidance of new technology, artificial intelligence has improved the learning style of preschool children. The ability of preschool children to understand the world and understand the world has improved, which is conducive to the improvement of children's cognitive ability. In the artificial intelligence era kindergartens, the use of new strategies to promote the development of preschool children's operational ability. Young children combine traditional learning with multimedia Internet autonomy in the era of artificial intelligence. At the same time of learning mode change, their practical ability and operational skills are correspondingly developed. In the era of artificial intelligence, young children have upgraded their learning in five major areas to a new level, and their abilities in children's language, society, science, health, and art have all improved.

Preschool children have great potential and imagination. They are full of curiosity about the world. In the era of artificial intelligence, preschool children will fully exert their potential and combine their characteristics with the times to enhance their development level.

Childcare education for preschool children

Preschool is a critical period. Scientists have found that the nervous system in the brains of preschool children is made up of countless synapses. The more children see children before school, the more developed the synapse. The color, shape,

and movement characteristics of these things are very educational for preschool children. We can teach the baby some common sense knowledge by doing games, telling stories, and so on. Preschoolers are like a sponge. They are immersed in a lot of information. Parents can make good use of this information to lay the foundation for their preschool education.

If the child knows about 2000 words before going to school, it will basically solve the problem of children's reading.

The industrial age relies on IQ (intellectual quotient), the information age wins in EQ (emotional quotient), and the artificial intelligence era requires AICQ (Artificial Intelligence Cooperation Quotient). I summarized the labor quality required in the artificial intelligence era as a "three-layer pyramid" model, IQ is located at the bottom of the pyramid, EQ is located in the middle of the pyramid, and AICQ is at the top of the pyramid.

3.4 Self-directed reading of young children

Learning new knowledge is an important skill for individuals to survive. The human brain has excellent adaptability and learning ability. The ability of children to read autonomously is the key to their reading activities. Self-directed reading is a process of adaptive learning. Children can independently respond to the challenges in the reading process according to their own learning rhythm. At the

same time, children's ability to discover, interpret, and "learn by doing" can be rapidly developed.

Early childhood is an important period in which an individual develops basic reading ability, forms an independent reading consciousness, and masters reading skills. The cultivation of individual self-reading ability in early childhood is based on reading habits and reading levels.

And the formation of reading quality has an important impact. Children's self-learning refers to children's self-organization and self-learning, constantly monitoring and adjusting their cognitive and emotional states during the reading process, observing and applying various strategies to adjust their reading behavior, and effectively utilizing the material and environment. Social resources form an activity that understands and grasps the reading object as a whole. In the process of self-learning, young children continue to expand into the original knowledge system through self-exploration, self-selection, self-regulation, self-construction and self-creation, and gradually expand the knowledge network.

3.5 Characteristics of preschool children

Preschool children refer to children who have not reached the age of enrollment. The definition of the age of children entering the school is generally 5 to 6 years

old. Except for the 1 to 2 years of early childhood, 3 to 6 years old is the cognitive society of preschool children. At the main stage, the study will target 3 to 6-year-old preschool children, analyze their physiological and psychological characteristics, and propose corresponding interaction design principles.

3.51 Visual and auditory features

The visual acuity of children aged 3-6 years is fully mature, and it can make sensitive visual reflections on visible objects of 15-20 cm under the control of the central nervous system. With the richness of visual experience and the perfection of visual perception, it will have certain ability to distinguish shapes, lines, colors, etc. The viewpoint will focus on the contours, and the contrasting colors are particularly sensitive to red. At the same time, we will establish a visual center with ourselves as the starting point, feel the surrounding environment, and gradually expand to the concept of space. Excluding the influence of innate factors, children's hearing ability is well developed at the age of 1 and accompanied by obvious sound localization behavior. At 3 to 6 years old, the auditory level will become mature and stable, and the sound size, tone and tone energy can be Make a clear distinction, be able to accurately locate the location of the sound source, and identify the emitted object of the sound.

3.52 Touch and limb characteristics

Tactile sensation is one of the important means of preschool children's cognitive

world, and it is the stress response of nerve cells on the skin after receiving external environmental stimuli. Tactile sensation can be divided into recognition system and defense system, and the recognition system of tactile stimulation in children aged 3-6 years has completely surpassed the defense system, and can sense the changes of the external environment and the texture of the object through tactile signals. Preschool children are in the stage of physical growth, and the joint muscle movements are higher than the small muscle movements. This situation makes them unable to complete the long-lasting, fast-moving, high-precision movement tasks, such as eating porcelain. The bowl may fall to the ground and break, unable to grasp the shaking ball.

3.53 Psychological Cognitive Features

Children's psychological dominance usually shows variability and uncertainty, but for novelty things, there must be curiosity and exploration of psychological behavior.

American neurologist Erik H Erikson said in "Childhood and Society": "Children have a strong tendency to self-persistence, and any behavior that violates their will is manifested through emotions, psychology, and behavior." Psychological immaturity also determines the stage performance of behavior and personality, naughty, imitation, active, self-imagining and intoxication.

The cognitive development stage of the Swiss child psychologist Piaget divides the cognitive development characteristics of children into four stages. Preschool children are in the “pre-operational stage”. The main features are as follows: Inattention is not concentrated, and can not be focused for a long time. The same thing; abstract thinking is weak, requires more intuitive, visual, and episodic content to guide learning; verbal ability is gradually strengthened, can be simple communication and retelling; purpose is enhanced, but lack of thinking before behavior.

The core elements of educational interaction design for preschool children are children's various characteristics, and the characteristics are closely related. The human body information processing-feedback model is shown in Figure 1. In the design and development, each characteristic performance should be carefully balanced. Optimize the way information and behavioral interactions between children and products are the only way to meet the children's use and cognitive needs and attract more users.

3.6 The effect of artificial intelligence on children's learning

The change of learning styles of preschool children in the era of artificial intelligence is closely related to the learning of children's life through Internet-

based new education. "Internet + education" is not just the application of the Internet and mobile Internet technology in education, nor is it not only the education Internet technology to establish various education and learning platforms; but the deep integration of the Internet, mobile Internet and education, is to promote educational progress. Strategic and holistic educational changes in efficiency, organizational change, and innovation in education and productivity.

In terms of the way children learn in preschool, traditional early childhood learning includes observational learning, operational learning, language comprehension learning, and social learning. However, under the guidance of new technology, artificial intelligence has improved the learning style of preschool children. The ability of preschool children to understand the world and understand the world has improved, which is conducive to the improvement of children's cognitive ability. In the artificial intelligence era kindergartens, the use of new strategies to promote the development of preschool children's operational ability. Young children combine traditional learning with multimedia Internet autonomy in the era of artificial intelligence. At the same time of learning mode change, their practical ability and operational skills are correspondingly developed. In the era of artificial intelligence, young children have upgraded their learning in five major areas to a new level, and their abilities in children's language, society, science, health, and art have all improved. Preschool children have great potential and imagination. They are full of curiosity about the world. In the era of artificial

intelligence, preschool children will fully exert their potential and combine their characteristics with the times to enhance their development level.

3.61Problems in the learning style of children and guiding suggestions in the era of artificial intelligence

1. Problems

(1) Artificial intelligence technology is frequently used

In the era of artificial intelligence, combining new technology with teaching is undoubtedly a new learning strategy for early childhood learning. However, preschool children have too much contact with artificial intelligence technology, their learning style has been changed, and the impact of new learning methods on traditional learning methods has weakened the acceptance of new learning of artificial intelligence by young children, thus hindering the improvement of children's development level.

(2) Adult intelligence dissemination information adultization

In today's era, multimedia networks spread too much adult information, which is not conducive to creating a child-friendly living environment for preschool children. In the era of artificial intelligence, the transformation of children's learning styles, for the information disseminated under the multimedia, the children themselves have no clear choices about the good or bad of information.

The rapid development of today's information society has flooded the world of children with a large amount of adult information, and children will receive more or less information that is not suitable for their age. In the era of artificial intelligence, information is widely spread, and children's learning changes, making the development of young children tend to be adult. The phenomenon of "premature maturity" is widely used by new media, and "adult" information affects the growth and development of young children. Preschool children should use the appropriate learning methods to achieve wholehearted progress in a safe, comfortable and childlike environment.

2. Guidance advice

(1) Rational use of artificial intelligence technology

Reasonable use of artificial intelligence technology in teaching, using appropriate learning strategies, applying artificial intelligence technology to teaching, stimulating children's interest and curiosity, so that children can fully improve their own learning while using artificial intelligence technology. Ability to develop their abilities better in a high-tech social environment. Fully and rational use of artificial intelligence resources, rational allocation of resources, innovation and artificial intelligence technology and early childhood learning strategies, rational use of artificial intelligence, pre-school children's physical and mental health to maximize.

(2) Suitability of disseminating information

In the age of information technology, technological innovation has brought about

a great spread of information, which requires us to choose information for preschool children that suits their physical and mental development. Screening out information that is conducive to the healthy development of children's physical and mental health can improve the effectiveness of early childhood learning. Appropriate information is extremely important in the scope of preschool children's cognition. It respects the age of children's development and conforms to the development stage of children's cognitive level. It should not spread the advanced information and hinder the growth and development of young children. In the era of artificial intelligence, choose effective information that meets the characteristics of preschool children's physical and mental development, and let them accept "belonging to children's own information" to promote the growth and progress of preschool children's cognition, skills and sociological emotions. Preschool children get full learning and progress in the era of artificial intelligence. They have positive significance for families, kindergartens and countries. Only by rationally utilizing emerging resources and technologies, the resources of artificial intelligence era can be integrated and utilized to better serve preschool children. Let young children grow healthily in a pleasant environment.

3.7 Chapter 3 Summary (Relationship Diagram)

4. Child and parent needs and motivations

After analyzing the bibliography on this topic, I summarized it in the previous chapters. I think it is necessary to play a field research activity that will give me a more complete understanding of my project users and understand their main needs and difficulties. To this end, I rely on a number of methods that are part of the theory set forth in the design of the human center.

People-centered design is a creative approach that addresses the concerns of people and their needs. In this type of approach, empathy plays a central role in creating with the people you are planning. It is from the contact with people, from listening to their views and their needs, innovative, useful solutions can be produced and concrete.

4.1 How to conduct user research

My research goal is to design a toolkit for preschoolers to better understand the key terms of artificial intelligence, so that they can better collaborate with artificial intelligence products. Provide tips and ideas that reflect existing issues.

Investigating parents as the target of research is because parents hope that parents can help children understand the important concepts that can only be

related to human beings. Parents can play an important guiding role in children's growth path.

Instead, focus only on preschoolers because of the child's curiosity and more leisure time during this period, so they have greater possibilities for intervention. In addition, as appeared during the research phase, the characteristics of preschool children have been clarified in Chapter 2.

In the process, the children's perspective is also crucial to design a balanced solution between parental help and the child's interests.

4.2 User interview

The first tool I used to survey reference users was an interview with parents, which proved very useful during the development of the project hypothesis. Specifically, I met 10 parents. The survey was conducted at the Dawang Road Cultural Park in Beijing. Most of them were young Gaozhi parents after the 80s. By analyzing the response, some common problems can be identified to identify possible areas of intervention. The problem is then resubmitted to a larger sample by disseminating an online questionnaire.

The interviews with the parents were not fully covered, but the results of the most

interesting questions and answers were chosen for the purpose of the study. Each question follows the answers of the respondents.

This chapter is dedicated to field research. Specifically, it introduces all the tools used to investigate people's needs and aspirations.

In particular, some of the information collected is aggregated and represented graphically, highlighting these insights.

4.21

1. What is the most interesting thing to play with your child in your life?

Meina He: The most beautiful part is to play with the children, listen to them and answer their strangest questions.

Feifei li: Because of the children's curiosity, the most beautiful and interesting part is to let me know myself again and again.

Huili Bao: The happiest part is to teach children to explain and understand different growth experiences. Their super understanding is unbelievable.

Jianian Yang: The most beautiful part is the ability to pass on the passion of knowledge to the children, but at the same time learn from them every day... see how much I can teach us!

2. Have you heard of artificial intelligence education? If so, what insights do you have?

Feifei li: Yes, because the country is introducing corresponding policies. Last year I participated in an artificial intelligence education conference, which is very advanced from an educational perspective. Discussions about educational programs are indeed ahead of the school. It must be remembered that, so far, what children need is no longer a stereotyped course for the school, but an education for skills. Knowledge-based capabilities require a practical approach that combines knowledge and know-how. Most parents find it difficult to use this method because they are not used to reasoning by project.

Jianian Yang: No. I don't know if there is any connection, but last year I always heard about teaching children to learn programming toys in WeChat and some news, but the age group is in primary school and high school students.

Huili Bao: No, but I am very interested. What is this?

Meina He: I have heard about artificial intelligence education, but I don't know what it is.

Xiaolin Zhou:Yes. It is to use artificial intelligence machines to analyze students' abilities. According to the development of each person's specialty, I think this is a very good tool to help school teachers, and also a good way for students to

develop their own personality.

What do you think about educating preschool children about the concept of artificial intelligence?

Feifei li: I should follow the trend of the times. Although I don't understand what artificial intelligence is, I still want to know. If I can understand something, I will try my best to teach my children. Of course, if there are good tools to teach children, I am absolutely Will not refuse.

Jianian Yang: The country and the world are paying attention to this issue, and let the children integrate into this background as soon as possible.

Huili Bao: It is more important to learn the existing knowledge first. We don’ t know how children know this thing, or don’ t waste time here.

Meina He: I don't quite understand what it is. No way to answer

Xiaolin Zhou: I think that artificial intelligence education for preschool children should be in line with children's cognitive ability, and try to learn in play, so that children are more acceptable because they have limited cognitive ability and the concept of artificial intelligence is very large. It is not easy for children to understand, if I can have related picture books or small toys, I will buy them in the first time.

4. If you choose a way to learn the basic vocabulary of artificial intelligence, you will choose the following: mobile game app, picture book story, paper or wooden toys, which one do you prefer? why?

Feifei li: I prefer storybooks and paper and wooden toys, because if I use electronic products, I will limit the use time, because the children still have a small time to watch the electronic screen is not good for the eyes.

Jianian Yang: Yes, I will see which fun, and then play with the children.

Huili Bao: I like wooden toys more. My children don't like to read picture books. They always like to beat people directly.

Meina He: I like mobile games more, because when I go out to play, I can take them out to the high-speed rail.

Xiaolin Zhou: Wooden toys, because you can play with your children, there are other children who can also be together, they need to be with their little friends.

4.23 Expert research: Qiang Sunshine Independent Thinking School Principal Ning Zhou and Vice President Boliang Lv

They are the directors of the Hebei Provincial Arts Education Committee, a professional design, have a strong thinking divergence and guidance, and have rich teaching experience. They are committed to popularizing and promoting children's innovative education concepts and working to provide an international education for millions of children and families in China.

How do you teach children when knowledge is difficult to understand?

Try to give examples of real life as much as possible, give your child time to think, let the children try more, and create their own world.

Teaching and game organization methods?

This problem is very good! Train your child to focus on playing like a game. First, there are clear goals such as Angry Birds. There are a few pigs and birds. You will understand that you can pass the pig after you have finished playing the pig. But do you have a clear goal in learning knowledge? If you talk directly to your child, let's learn what artificial intelligence is, then how can a child with such a big and esoteric question know where to start, he will be confused, then parents can say that we will do this game first. first round. So the first level of difficulty is to compound the perception of each age group, then the three most important points I think are:

1 difficulty

2 have a clear goal

3 Parents need timely feedback, for example: You can say "the kid's game is really good, but if you do it, you may follow it well." Parents can give good feedback to the child to help the child. Have you seen children smuggling while playing games? No, they are very focused, because the game is more reasonable than the learning design, so it is not advisable to instill knowledge into the children.

你怎么获取人工智能相关知识？How do you get knowledge about artificial intelligence?

When you ask me this question, my mind thinks of science fiction films, such as robots, computers, mobile phones, etc., is something that has no human vital signs to do some intelligent work, so the channel I get is science fiction. The news on the movies and the internet and the push of the WeChat public number were not specifically understood. But I know that programming is very popular now. I didn't know the relationship between programming and artificial intelligence before. After talking to you, I realized that programming is the language for making artificial intelligence.

What is the understanding of artificial intelligence related concepts and terminology? And vision?

I don't know anything at all, but I have a strong understanding of my wishes. I think that whether it is your own career or training children, you should look at the trend, it is best to go downwind or go with the water, so that our growth and development will be very fast, because knowledge is lagging behind. Therefore, parents need to first understand it to screen it, not to say that it is popular and then go to school.

From Chile, emotions, art, physical fitness. From the aspects of perception such as touch, taste, sight, hearing, including environmental stimulation, through these aspects to cultivate children's cognition, good parents are very concerned about children's ability, but at present most parents in China only care about their children's achievements and results. .

Just as the old Chinese saying "to teach people to fish is not as good as to teach people to fish", most parents now only care about the amount of fish in their hands, and do not really pay attention to their ability to "fish". For example, the ability to think in the opposite direction and the ability to think, you will find that many children's parents forced to instill knowledge to the child, the child may be reversed. Why do we call the Independent Thinking School, we are very concerned about the child's ability to think independently, because once the child starts to think independently, they will use a series of means, for example, through observation and then have their own thinking.

When a child sees an article, he needs to read it first and then think hard. Finally, he needs to use it in order to form a closed loop. Most parents in China are staring at the children to let their children explore and do not interact with the children. It is a very wrong idea and practice to deduce one of the responsibilities of education to the teacher.

Parents need to be companionship and lead. Children are very willing to accept new things, and they have super absorptive capacity. This is my understanding of the children. They can do it when they ask for the children. Children aged 3-6 are very well-modeled. When older children are social, they will be socialized. After socialization, children will have their own ideas. It is not easy to change them.

Therefore, 3-6 years old is especially suitable for learning and cultivating their good habits. If they play with robots and explore robots as part of their lives, it is easy to carry out more in-depth understanding of artificial intelligence.

4.3 User interview summary

The two types of interviews conducted were particularly useful because on the one hand they made me more familiar with the research topics and confirmed what had already appeared in the bibliographic research phase, on the other hand they gave me some ideas for solving the project. I can draw from the meeting with the parents of the parents the diversity of the family and the profound impact of the parents on the child. In fact, there are new and avant-garde parents who strive to do their best and work hard to study changes in the form of the state. In the WeChat communication, I was particularly shocked by the thoughts of Lilin's parents. Here's what he said: "The so-called "artificial intelligence education" is a more valuable category. This is the future! We should be able to provide them with tools to look to the future rather than the idea of attaching importance to basic education in the past.

In fact, the principal has repeatedly stressed the need to improve the diversity of these children, as well as their knowledge, talents and attitudes as part of their potential wealth. However, as she said, another topic of great interest in recent years is the need to improve the artificial intelligence education of elementary and

middle-aged children in primary schools through programming games. To do this, we must work hard to promote this aspect of the publicity, because most parents are not well aware of the situation. Regarding this last aspect, the parents of zhaolin said: "Artificial intelligence preschool education is often important. I believe that as parents, we should teach children how to more effectively understand human artificial intelligence and promote effective cooperation between children drinking machines. How to work with robots Contact and how to find the answer to the question in a collaborative way. I believe there will be more good solutions in the future.

4.4 online survey

After gaining a lot of insights from the interviews, I realized that I needed to investigate the features and habits of the users more deeply. In order to be able to collect large amounts of comparative data, the tools I use are no longer part of qualitative research, but part of quantitative research:

Online questionnaires or online surveys, through the questionnaire network (https://www.wenjuan.com/s/73a6viO/) questionnaires for parents of preschool children, the purpose is to more accurately wear features and user habits.

1 Background: General issues such as gender, age, hobbies, are considered to be the type of teacher, and individuals use social networks.

How do you teach children when knowledge is difficult to understand?

What do you think about educating preschool children about the concept of

artificial intelligence?

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Method: Family game organization method.

How do you get knowledge about artificial intelligence?

What is the understanding of artificial intelligence related concepts and terminology? And vision?

The questionnaire was distributed online: mail and social networking and on-site research. As for the e-mail, it has been forwarded to the contacts I have and the principals of some kindergartens in Beijing, and then spread.

As for social networking, I took advantage of the potential of wechat. Because my high school alumnus Zhou Ning and his lover Lu Boliang founded a kindergarten and a thousand miles of independent thinking art school, the questionnaire with their help can effectively feedback to 458 parents and children.

A total of 458 responses were received.

1 Background: General issues such as gender, age, hobbies, are considered to be the type of teacher, and individuals use social networks.

From the data collected, the mother who took the child with the most time (326/458). However, for the age group, the sample questionnaire was very diverse and covered all bands (between <24 and >48 years). In particular, parents in the 26 to 38 age group have the highest participation.

Considering the geographical location, you can notice that the most answers come from families in Beijing. However, WeChat is also used to reach a significant

number of families in other parts of China.

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Considering the geographical location, you can notice that the most answers come from families in Beijing. However, WeChat is also used to reach a significant number of families in other parts of China.

When asked "What kind of parents do you think you are?" most people chose "open change (167), followed by "creative" (65), "traditionalism" (26), "innovation" (22 Among the parents who choose the "Other" category, we can find the following answers: "eager to change", "enthusiasm", "everything, except traditionalism", "a little bit", "motivated." Therefore, most parents are willing to participate.

As for leisure time management, most people like to spend time with their family (109), followed by reading (68), traveling (61), engaging in creative and manual activities (12), sports (11), visiting exhibitions (9) , update and study (8), attend

meetings (6). As you can see, some parents use their free time for updates or lab activities, but this is only a small number.

If you analyze the use of social networks, you will find that everyone uses at least one. The most popular is wechat, a tool primarily used to contact family and friends. In the second place, I found qq.

How do you teach children when knowledge is difficult to understand?

After the first part devoted to the general characteristics of the sample, I continued to discuss issues related to children's new knowledge. When asked about "the difficulties that children face when learning fresh knowledge.

At the time, most parents answered the communication question (178), then the child was not interested (38), the child was impatient (36), and needed to repeat to remember (6) and the parents did not have time to teach (1).

What do you think about educating preschool children about the concept of artificial intelligence?

Twenty-nine people said that it is impossible to define the importance of a more knowledge concept because each concept has its own importance. In this case, leave a space to justify its response. In the first three positions of analysis, the main motivations for those who answer the communication questions are: children lack autonomy, limited attention and concentration time, new rhythms and rules to

follow, and literacy language must be established.

On the contrary, among the people who choose the second category, there is a view that the knowledge is too difficult to understand, and the parents are not well understood, so the child is not interested.

If the child does not have a large language barrier, then these difficulties occur with their parents.

Method: Family game organization method.

Instead, turning to the "methods" section, most parents prefer to teach children in the form of games (102), then "repeated methods" (90), "transform various forms" (56), "through positive traditional education. "(40). Despite these preferences, most parents think that the way games are useful is because they provide skills and allow everyone to participate. According to their point of view, even children are actively considering this activity.

How do you get knowledge about artificial intelligence?

As for access to artificial intelligence-related knowledge, in most cases, due to the support of national policies, major media news is constantly exploring this topic, sources: Internet, news, WeChat public number.

What is the understanding of artificial intelligence related concepts and terminology? And vision?

Most parents are very willing to let their children know about artificial intelligence. The knowledge ai vocabulary is not well understood, and the method, how to teach and make progress is the key.

Finally, although more than half have heard of artificial intelligence education, only 14% have heard of the artificial intelligence education enlightenment for preschool children.

(14b) Geographical distribution of the analyzed sample.

It is also useful to consider the child's point of view during the research phase. In order to get in touch with them, I went to Langyuan Cultural Park, Dawang Road, Chaoyang District, Beijing. This is the park where my husband participated in the design. The park is located in the high cultural and economic center. In addition, in the vicinity of some kindergartens in the area, the park is presented as a place frequented by children of different origins and origins due to the study rooms and public exhibition halls and cultural events.

After being authorized, on a Sunday afternoon, I went to the park in a room dedicated to children. For the children who accompanied the adults to the library, I asked them to portray their views on artificial intelligence and answer some questions anonymously. Specifically, the children were asked to fill out a template and they were invited to write down: age, country of birth, what their preferences are, what they want to do when they grow up. Then, the children must express their love of the robot through sketches, and write the questions in the following sections.

This weekend, six pictures were collected and produced by two children aged 5 years, 1 year old, 2 years old, and 3 years old. Specifically, the five Chinese children were born in Beijing and one was born abroad.

This type of activity is an opportunity to take a closer look at the child's behavior and let me master some interesting details. First, I had a problem assigning tasks to young children: the 3-year-old was indeed more difficult to faithfully follow the template requirements, and spent more time on design drawing than others. In addition, in some cases, I have to write according to my child's dictation because I can't write correctly (the event was done on weekends).

In this experience. The content passed to the template, I noticed that it is difficult for all children to immediately identify their abilities. After the first reflection moment, most children wrote that they are very good at painting. The question "What kind of person do you want to be when you grow up?" initially caused a certain degree of uncertainty, and then left imaginative and fun answers for the 6- and 5-year-old children, and was older. The child provides a clearer answer. Explain on the other hand that classification of drawings is possible because of further explanations from children. A favorite activity at school, playing and appearing with friends, and then helping parents during the event. When asked if you don't like to play games with children, most children are very willing, while other children say they will collide with their companions during the game.

4.5 Data comprehensive statistics

Role (parents and preschool children)

In order to make the data collected during the research phase meaningful, the persona technology was used. Launched by Alan Cooper in 1999, it is a typical representation of real or potential users. A character is not a true description of an individual user or a normal user, but a model that represents behavior, goals, and motivation through a fictitious description of the individual. This description also contains personal data to make the character more "tangible and life".

Alan Cooper1 defines the role as: "The precise description of our users and the goals they want to achieve." Calde, Goodwin & Reimann in 2002 gave a slightly more detailed definition: "User models or personas, fictitious and detailed The prototype role represents the grouping of different behaviors, goals and motivations observed and identified during the research phase."

Based on these arguments, the following pages describe the roles of parents and preschool children.

Accurately describe our users and the goals they want to achieve."

In 2002, Calde, Goodwin and Reimann gave a more detailed definition: "User or role models are fictitious, and detailed prototype characters represent different groups of behaviors, goals, and motivations observed and determined during the research phase.

4.51. Description

Learn how to teach your child,

Looking for tools to teach children word letters

Arouse the attention of the children

Assess your child's skills

1. Get advice on how to build new activities at home

2. Determine the specific needs of the child

3. Find tools to support learning ai

4. Evaluate your child's skills

The Internet is the source of my inspiration:

If you know where to find, you will find many good ideas!

Xiaoyu Guo is 33 years old and lives with her partner. Love children and try new games and activities. In his free time, he likes to be with friends, working on "self-DIY" and finding new activities at home or outdoors. She likes to work with her children's partners by bringing positive knowledge. She is a curious, creative and motivated person who supports the importance of the game at home, which is why she sometimes clashes with more traditional colleagues. Use the internet and social networks every day as a tool for networking and finding ideas.

1 will always generate new incentives for the event

2 looking for new play tools

3 Evaluate your child's skills

1 Pass my passion to the child

2 Infuse your child with imagination and creativity

Meimei he is 32 years old. He regards the child's artificial intelligence education work as a mission and hopes to pass new things to the new generation. In his spare time, he likes to travel abroad, attend seminars, visit exhibitions and learn about the latest expressions. She is passionate about teaching and new technology. She likes to educate her children by trying new ways of interacting, often causing confusion and confusion among colleagues. He often uses the Internet and social networks as a source of inspiration and updates.

1There are always new stimuli

2Stay informed about innovative ways around the world

3Looking for good educational tools

4Bring curiosity to children

4.52

In the research phase, in addition to investigating the views of parents, it was decided to take into account the views of children. The collected data was carried out in the Beijing Cultural Park and synthesized through the tools of personality. Specifically, the child's photo is allowed to be placed in the paper, including: two children and two little girls. In creating these profiles, only a 6-year-old child is a 5-year-old child, because the larger child's insights are clearer.

After determining the four roles, these characters are positioned on an axis that

represents the level of support gained from the parents during extracurricular learning. The axis is then crossed with an axis representing Chinese time. In this case, in the subsequent pages, for each graphic, an in-depth table is provided that collects internal habits, goals, and requirements.

Loner

I don't know much at school... I spent time in my grandparents' shop in the afternoon."

1Qiang Zhang was born in Beijing. He doesn't like to go to school because he is more used to playing at home. In class, he is very silent and often distracted. He is more lonely and does not like to play with children. Outside the school, he spends time at his grandparents' shop. At home, he only likes to watch cartoons himself, because his father is too busy to have time to accompany him, and only his mother is at home every day.

Demand 1 can be understood 2 can learn

Dad can help me at any time, but sometimes he doesn't understand

Aiyu Lin was born in beijing. She likes ai toys very much, and his parents, although they are studying hard, always feel that they don't know enough. She likes to go to school very much, play with friends, and play games with her teacher. On the other hand, outside the school, he spent a lot of time with his mother, sometimes playing with his best friends. In the family, he is mainly playing high toys, because

his parents are very keen to play with their daughters.

Smooth at school

play with friends

Be understood and listened

Supported in research

Cheng Lu was born in the UK but his parents are Beijingers. She really likes to go to school to study, play and be with her best friends: Yiyi and Anna. Parents often take her to the science fair and workshop, and he invites his classmates to go home and play ai games. Many devices in the home are intelligent, such as sweepers, smart love audio, smart washing machines, etc. I am very curious about the structure and basic knowledge of these smart products, Mom and Dad will also tell me.

1 Get more ai related knowledge

2 play more robots

3 making robot toys and playing with children

4.6 Customer Journey Map（CJM）

在定义了设计基础的角色之后，构建了相应的用户旅程。用户旅程是一种描述客户在使用产品或者服务时的体验，主观反应和感受的方法，用来识别最重要和最关键的时刻。要做到这一点，我们必须首先根据收集的各种信息将角色的经验分为阶段或时刻。通过在视觉上随时间放置信息，可以更容易地识别行动机会。

After defining the role of the design basis, the corresponding user journey is built.

A user journey is a way of describing the customer's experience, subjective response, and feelings when using a product or service to identify the most important and critical moments. To do this, we must first divide the experience of the role into phases or moments based on the various information gathered. By placing information visually over time, it is easier to identify opportunities for action.

1 Improve the understanding of preschool children's basic concepts of artificial intelligence

2 Help children and parents better apply artificial intelligence knowledge

3 Support creative adaptation game

4 Promote communication and communication between parents and children

5. PROJECT

This chapter 5.1 describes the market background of the children's toy market in China, but has been fully committed to the project since 5.2. Therefore, the following key pages describe the concept, system characteristics, graphic identification and specifications of each artifact. The final pages of this chapter reflect the main considerations and reflections that have emerged after the use of samples from parents and children.

An artificial intelligence basic vocabulary learning toolbox for preschool children and parents. This tool consists of 3 parts: 1Funny AI Dog Painted Book (helping

children and parents understand the fascinating AI by reading the picture book) , 2Funny AI Dog battle board game (helping children better use the terminology of artificial intelligence in the game and establish a better parent-child relationship with parents), 3 creative record card

(Creative Record Card helps to reflect on existing issues and provide tips and ideas inspired by creative methods)

5.1 Project market background

According to the data of China Children's Research， 15% for children's education products and services.

Children aged 4-6, imitating adult practice activities, have significantly increased brand preference, and parents will ask and consider children's preferences and feelings when purchasing goods. This stage of consumption is concentrated in the education expenditure, accounting for up to 60%, mainly based on early education and extracurricular interest training.

In China's traditional toy age-appropriate consumer groups, the share of infants and children aged 0-6 increased by 2pcts from 35% in 2013 to 37% in 2018.

Since the 1990s, the per capita educational, cultural and recreational expenditures of urban households in China have grown at an average annual rate of 14.3%.

The market size of the baby education in 2018 reached 213 billion yuan.

3.6% of families let children participate in technology training such as aircraft

models and robots

5.11 Baby industry consumption structure

5.12 Children's industrial structure

5.13 China's toy market consumption age structure

5.16 Pre-school education: the rapidly developing blue ocean market

5.2 Design structure of funny ai dog

5.3 Visual Identity

Visual Recognition When designing the visual recognition of Funny AI Dog, I tried to build a picture book style and an easy-to-read language. The project is called Funny AI Dog, the name comes from my design philosophy to make children happy to learn, so the word "Funny" is used. On the other hand, dog is chosen because the dog has always been the most loyal friend of human beings, and the dog's spiritual quality. It is a rock-solid loyalty. I am optimistic about artificial intelligence. I hope that in the future, strong artificial intelligence will be as loyal to human beings as human beings. Funny AI Dog is actually a toolkit for playing and playing in an academic environment. Since he explicitly mentioned the term "toolkit," it reviews the basic concepts of artificial intelligence. The image of AI Dog is intended to be presented to everyone in a friendly manner.

For the visual aspect, we choose to use bright colors to capture attention. In particular, for each set of vocabulary pictures that have been attributed to a particular color, in this way various artifacts are facilitated in combination with the board games in which they are involved. In addition, there are 12 spaceship lab ai studios in the card game. An icon system is designed to be used as a visual language on the workpiece and a texture with decorative features. In addition, when designing visual recognition, I always thought of it as a constraint: making the material easy to print. Therefore, they adopted the classic format and avoided real-time graphics of the page.

The font used is Gotham, a famous sans serif geometric font inspired by the traditional American street style. It is a font designed by the famous American font designer Tobias Frere-Jones, commissioned by GQ Magazine. Gotham is large, modern, simple, young and has a wide range of applications.

5.4 Picture book

Kids!Let's start playing the card game of hunting for Vinci.Go Go Go!”

The content of the funny ai dog storybook is the second chapter. This storybook takes up the second chapter of artificial intelligence background research and undertakes the application of game cards in the project. Funny ai dog picture book presents incomprehensible artificial intelligence nouns in lively picture book illustrations, giving parents and children a relaxed and happy learning atmosphere,

and can easily play after fully understanding the contents of this book. Card game.

The book is divided into 4 parts:

1 At the beginning of the book, 2-5 pages, showing the background of the story and the introduction of the characters.

2 In the middle of page 6-31, the main content of the explanation of ai nouns is shown.

3 In the final 32-33 of the funny ai dog picture, present the framework and logic of the nouns explained throughout the book.

4 At the end of the storybook shows the relationship with the card game: "Kids! Let's start playing the card game of hunting for Vinci. Go Go Go!

5.5 Funny ai dog card game

At the end of a card game or game, parents or children can record on this card when they have their own opinions on ai, and this card can create some upgraded gameplay for children and parents when they are willing.

The picture below is a print file. First I will print a card with 50mm✖□100mm.

Then print out four character avatars, and cut the edges through the machine film, and finally indent the card and paste the character avatar.

In order to better apply the terminology of artificial intelligence mentioned in the picture book story, I designed a card game of AI dog vinci and professor Luca.

A total of 8 card game accessories are:

1 laboratory 2 groups, a total of 12

2 dice

3 robot dog, professor, (accessory: robot dog and professor upgrade accessories)

4 data cards

5 function cards

6 bottom plate

7 instruction manual

8 innovative smart card

The following describes the various components and details the rules of the game.

Card Proofing Process£ʃ

Paper characteristics: 1. 200g double-sided metal laser white£ₐ2. 200g ordinary white card£ₐ3. 250g metal laser silver

Material composition:

1. Pine wood box

2.1cm pvc board (can be supported by red wood block to become a transparent drawing board. Parents and children can write and draw on it, and can be used repeatedly)

3. Red wooden block (called on the wooden box to support the transparent PVC board, can be used as a creative divergent drawing board)

4. Water-based pen (pen cap with pen wipe, you can erase the notes on the pvc board at any time)

5.6 Use test

The FUNNY AI DOG Toolkit is actually tested with its reference users to gather comments and feedback.

In particular, I contacted the four parents I met during the research phase. In the meeting with each of them, I personally showed all the items. The entire project received a positive response and generated interest and enthusiasm for this new approach. In particular, I got some advice on future developments and asked questions about where and how to find better materials. Due to some questions about the tools in the "Family" section, I decided to test them with a group of parents.

The event is believed to not only help children and parents better understand AI vocabulary, but also help build better parent-child relationships. At the end of the event, it lasted about an hour, and I asked each parent to comment on the content of the innovation card. Here are some of the comments:

"This is a very interesting gameplay method because it makes it easier for kids and parents to understand and can easily display results when playing card games."

Using card games helps focus and achieve your goals immediately. "This game is very useful because it allows us to continually reuse the nouns of artificial intelligence and divide them into parts. "We never tried to use this kind of game. I realized that through this kind of game, we can find some strange and interesting ideas.

Here are some of the comments:

"I felt that my partner was very interesting when playing card games. From the game I found Professor Vinci really good!

"I have a lot of fun playing with these games with my companions... It' s great to play in the team!

6.1 conclusion

Did not leave without saying goodbye and deeply love the artificial intelligence robot dog of tiziana

A smart robot dog with a beautiful family and a deep love for humanity

A university research professor with super-high artificial intelligence compilation skills

6.2BOOK

Artificial Intelligence: A Modern Approach, Third Edition

Tsinghua University Press, 2013 (2017 . 1 Reprint)

Russell,S.J; Norvig,P.

The Future of Education: Educational Reform in the Age of Artificial Intelligence

Joseph · E. Orne , 2018

Mechanical Industry Press

Artificial Intelligence Graphic Paperback for Children

Miyake Yoichi , Morikawa Yuki， 2017

Shandong People's Publishing House

The pinnacle of data - big data revolution, history, reality and future

Zipei Xu,2014

China CITIC Press

Introduction to Artificial Intelligence

Li Deyi , Yu Jian , 2018

China Science and Technology Press

The Age of Intelligence: Big Data and the Smart Revolution Redefine the Future

Jun Wu ,2016

China CITIC Press

Artificial Intelligence Era

Jerry Kaplan, 2016

Zhejiang People's Publishing House

Ivy On The First Year

Yong Xue, 2009

China Youth Publishing House

A brief history of humankind

Yuval Herali, 2014

China CITIC Press