

Investment Analysis of Artificial Intelligence Industry in the ChatGPT Era

--Taking iFLYTEK as an example

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Abstract

In the ChatGPT era, artificial intelligence has had a huge social impact on many fields. First, briefly introduce the artificial intelligence industry, and analyze the development status of the industry in detail, then analyze the development characteristics of the artificial intelligence industry, and then analyze representative stocks such as HKUST Xunfei, combined with the future trend of the domestic artificial intelligence industry, and finally give specific details Investment value analysis and investment strategy.

Keywords

AI; Investment Analysis; ChatGPT; iFLYTEK.

1. Introduction

At the end of November 2022, the artificial intelligence chat robot ChatGPT was launched and quickly became popular on social media. In just 5 days, the number of registered users exceeded 1 million. In 2023, the update and development will be accelerated. Now OpenAI has officially launched GPT 4.0 Version. In this context, the huge potential and hidden crisis brought by artificial intelligence have received unprecedented attention. As one of the most popular industries in my country at present, the development of artificial intelligence industry is related to people's livelihood and welfare, and it also affects the transformation of the field of science and technology.

2. Basic definition and classification of the industry

2.1. Basic definition of artificial intelligence industry

Artificial Intelligence (AI) is a technology in the field of computer science whose goal is to create intelligent computer systems that can think, learn, understand, reason, perceive, communicate, and adapt like humans. The research and application of artificial intelligence involves many disciplines, including computer science, engineering, psychology, philosophy, linguistics, neuroscience, etc. It can be applied in various fields, including natural language processing, computer vision, machine learning, autonomous intelligence, intelligent interaction, etc.

2.2. Industry Status of Artificial Intelligence Industry

The artificial intelligence (AI) industry is currently in a stage of rapid development and has become one of the most important development fields in the global technology field. It is a technology and application involving multiple fields, including machine learning, natural

language processing, computer vision, etc. As technology continues to evolve, artificial intelligence is changing the way we live and work.

Market size: The scale of the artificial intelligence market continues to expand, according to the report of the international market research company IDC

According to the report, the global AI market is expected to reach US\$32.7 billion in 2021.

Applications: AI has been widely used in healthcare, finance, manufacturing, retail, logistics and other industries. In addition, smart homes, smart robots, smart transportation, smart cities and other fields also have broad application prospects. The application of artificial intelligence can improve efficiency, reduce costs, enhance safety and so on.

Technological development: Artificial intelligence technology continues to evolve, including deep learning, natural language processing, machine learning, computer vision, and more. At the same time, the hardware foundation of AI technology is also constantly improving, such as the development of chips such as GPU and TPU.

Competitive landscape: Globally, the United States, China, Europe and other countries and regions are all engaged in fierce competition in the field of artificial intelligence. At present, the Silicon Valley region of the United States and cities such as Beijing, Shanghai, and Shenzhen in China have become important centers in the field of artificial intelligence in the world.

Policy support: Governments of various countries have given great support to the development of artificial intelligence, and introduced relevant policies and plans to encourage enterprises to increase investment in the field of artificial intelligence.

In general, the artificial intelligence industry has very broad prospects for development, but it needs to solve some technical and ethical challenges, and at the same time needs the guidance and support of the government.

2.3. HKUST Xunfei Industry Research

HKUST Xunfei is an artificial intelligence enterprise with speech intelligence technology as its core. Its main business includes speech recognition, natural language processing, speech synthesis, intelligent dialogue, etc. Here is industry research on the company:

Market size: The development potential of the artificial intelligence market is huge, of which voice intelligence technology is a very important part. HKUST Xunfei is in a leading position in this market and can occupy more market share.

Product innovation: HKUST Xunfei has been continuously developing and innovating in voice intelligence technology, and has launched a variety of excellent products, such as voice input method, intelligent customer service, intelligent translation, etc. These products have continuously improved the company's competitiveness in the market.

Industry application: HKUST Xunfei has a strong strength in the application of artificial intelligence in different fields, such as education, medical care, and finance. The continuous development of these applications will help the company to further expand into the market.

Technical barriers: iFLYTEK has high technical barriers in voice intelligence technology, which makes it difficult for other companies to quickly enter this market, thereby enhancing the company's competitive advantage.

Internationalization strategy: HKUST Xunfei has also achieved good results in the international market. At present, it has cooperated with many international companies and launched a variety of smart products. The company's development in the international market will provide it with more opportunities and challenges.

In general, iFLYTEK has strong competitiveness and market advantages in the field of voice intelligence technology, and has broad prospects for future development.

3. Development status of the industry

3.1. Global AI Development Status

In 2022, the global AI market size will be US\$432.3 billion, an increase of nearly 20% over the same period last year. With the continuous enhancement and application of deep learning capabilities, since 2011, the artificial intelligence industry has made important breakthroughs. For artificial intelligence before deep learning, the machine only executes human orders, its main function is calculation, and cannot independently create experience; while deep learning enables artificial intelligence to realize independent creation of experience and interpretation in the process of "learning" and "reasoning" process of experience. In addition, more and more people use smartphones, the Internet of Things and other devices, machines and systems will generate massive amounts of data. Based on this, artificial intelligence neural networks are more efficient, and at the same time, more and more problems can be solved. The increasing upgrading of artificial intelligence chips has led to the enhancement of computing power, and has also laid a certain foundation for breakthroughs in algorithms.

But on the whole, the artificial intelligence industry is still in the formative period of the industry life cycle. The article analyzes the different links in the industrial chain respectively.

(1) Basic layer: As the hardware that determines the core of artificial intelligence computing capabilities, AI chips are still in the early stages of research and development. Although the existing GPU, FPGA, ASIC and other chips have their own advantages, they all have their own shortcomings. They have not yet matured and entered the commercialization stage, and there is a lot of room for improvement.

(2) Technical layer: image recognition, speech recognition and other special technologies in the stage of perceptual intelligence, with low technical difficulty and relatively mature development. In the deeper development of artificial intelligence, although in recent years, deep learning algorithms similar to human thinking functions have emerged, ushering in the rapid development of the artificial intelligence industry, but there are still great limitations. Chollet, the developer of the famous deep learning framework Keras, said that existing algorithms can only perform simple pattern recognition and cannot achieve general intelligence in the true sense. That is, in the short term, artificial intelligence will

The application field will still be dominated by weak artificial intelligence.

(3) Application layer: Based on the maturity of special technologies such as image recognition and speech recognition, the continuous accumulation of data, the improvement of cloud computing platforms, and the acceleration of the application of artificial intelligence technology in various industries, such as industrial robots, service robots and voice assistants, Started to enter the stage of industrialization.

According to the industry life cycle theory, the industry life cycle can be generally divided into four periods: formation period, growth period, maturity period and decline period. On the whole, the current artificial intelligence industry has great market potential, but the technical uncertainty is relatively strong. Due to the large investment in technology and the long payback period, companies have to take greater risks, and the profit margin is low. Some start-ups are prone to losses, resulting in a high elimination rate. When some technologies are relatively mature and have begun to enter industrialization, and the market growth rate remains high, the company also promises to continue to develop the market and cultivate customer participation. Based on the above characteristics, this study believes that the current artificial intelligence industry is in the period of industrial formation.

Challenges to the implementation of AI: The problems of data and computing power are still prominent, which are the main factors hindering the implementation of AI. High-quality data is an important guarantee for the success of AI algorithm models. Today, data collection, labeling,

and real compliance data shaping still account for a large part of the cost and time cost of AI solutions. At the same time, the issue of security and data ownership is still in the process of being repaired. For artificial intelligence applications, the demand for massive intelligent computing power, insufficient network construction and other technical facilities are major obstacles hindering the large-scale use of artificial intelligence, and the construction of intelligent computing power is also an urgent issue to be solved in the future.

3.2. Current status of AI development in China

The market size of China's artificial intelligence industry continues to grow rapidly, and the industry is booming. It is estimated that the scale of the artificial intelligence core industry will reach 198.8 billion yuan in 2021. With the continuous maturity of artificial intelligence technology, it has more and more extensive influence on social production and life, and its application in the economic field is also increasing. It is estimated that the core industry of artificial intelligence will exceed 600 billion yuan by 2026. In the field of artificial intelligence, there are already many listed companies involved in this business, and a certain degree of industry concentration has been formed, but there are still a large number of unprofitable companies. In the future, 30% to 45% of the market will be occupied by start-up companies. The high prosperity and large space potential of the AI industry will provide a good foundation for the development of the entire industrial chain.

The core software and hardware technology and industrial development of artificial intelligence in my country have achieved remarkable results, but compared with the industrial development trend of the same period in the world, there are still some factors restricting its development in terms of responding to domestic independent needs in the future.

3.2.1. The core technology of artificial intelligence hardware is restricted by others, and the design and manufacturing capabilities are uneven

Compared with the traditional semiconductor industry, my country's smart chip industry is not much different from the world's advanced level. The core technology is generally controlled by others, and the products are in a low-end state. my country's smart chip design capabilities are close to the level of world powers, but smart chip design companies are highly dependent on foreign tool chains. The long-term chip casting model has caused an imbalance between design capabilities and manufacturing capabilities. With the continuous development of smart chip technology, its role in the industrial field is becoming more and more important, which has a major impact on the entire industrial chain and gradually changes the global economic structure. Linking the degree of globalization with actual industrial applications increases the uncontrollability and insecurity of industrial supply chains.

3.2.2. Artificial intelligence software is highly dependent on open source technology, and basic theoretical research is insufficient

From the perspective of algorithms and artificial intelligence software, China mainly relies on foreign open source deep learning frameworks. In recent years, domestic companies have also begun to develop deep learning frameworks based on domestic technology architectures. While the product in question has advanced across many verticals, its key strengths have yet to be clearly defined. In the basic theory of artificial intelligence, there is a lack of major original scientific and technological achievements. The intelligent computing algorithm library is bound to foreign open source frameworks. The trend of innovation is seriously tracked. The lack of independent and continuous development capabilities is severely restricted.

3.2.3. The artificial intelligence industry ecosystem is not yet sound, lacking the driving force for sustainable development

Due to the lack of industrial chain layout, domestic artificial intelligence software and hardware companies lack cooperation and resource linkage, and have not yet built a coordinated and

complete industrial ecosystem, making it difficult to establish a closed value circle. At present, my country's artificial intelligence industry is still in its infancy, and there are relatively few related researches. In particular, the understanding of the characteristics and laws of the industry is not deep enough. Due to the lack of understanding of the characteristics and laws of the industry, the policies suitable for the characteristics of artificial intelligence are not perfect enough, and the support for financial investment, intellectual property protection, and the maintenance of corporate rights and interests is insufficient. It is difficult for intelligent start-ups to form the ability of independent development, and their sustainable development is put to the test.

3.2.4. The basic innovation environment of artificial intelligence is not sound enough, and the product collaborative innovation mechanism urgently needs to be optimized.

At present, the introduction of my country's artificial intelligence core technology lacks a unified overall management, there are confusions in technology introduction, fierce competition in homogenization, and so on. From the point of view of international experience, foreign developed countries have already regarded artificial intelligence as one of the development priorities of strategic emerging industries. Through government guidance and market drive, they have established a relatively mature technical support system and policy guarantee system, which is the core technology of domestic artificial intelligence. Self-control has laid a solid foundation. In addition, Chinese enterprises are not the leaders of the industrial ecology, the application effect of collaborative innovation has not yet emerged, and the friendly and win-win industrial environment needs to be improved.

3.3. Development Status of iFLYTEK AI

In the "New Generation Artificial Intelligence Industry Development Plan of Anhui Province (2018-2030)" issued by the People's Government of Anhui Province in May 2018, it is clear that relying on HKUST Xunfei, we will vigorously promote "brain-like dialogue robots", "Research and development of related technologies such as "image recognition" and "voice emotion". While the artificial intelligence industry has gradually been promoted to an important industry at the national development strategy level, a series of relevant policies and measures have been introduced one after another, and artificial intelligence enterprises will usher in a policy dividend period.

HKUST Xunfei focuses on artificial intelligence, especially intelligent speech recognition technology research and product development. It is one of the few domestic companies with core technology and independent intellectual property rights, and is also the most representative artificial intelligence company in the A-share market. At present, the company has reached the international leading level in the field of perceptual intelligence such as speech synthesis, speech recognition, spoken language evaluation, and machine translation, and has won the first place in the world's top speech synthesis competitions for 12 consecutive times. In recent years, it has gradually developed from speech to semantics, and has made new developments in the field of natural language processing. In terms of industry applications, the company has launched voice products and services covering the entire industry, occupying more than 70% of the Chinese voice market.

In addition, in the field of artificial intelligence, which is currently considered to be the biggest challenge in the artificial intelligence industry, the company broke the monopoly of Microsoft and won the first place in the world in the machine reading comprehension competition initiated by Stanford. At the same time, the industrialization of this technology has been applied to fields such as machine marking, and it has been used in the high school entrance examination in 24 regions in 2017.

4. Related stock analysis

On March 23, 2023, the stocks related to ChatGPT continued to strengthen, HKUST Xunfei hit the daily limit, and Torsi rose by more than 12%. HKUST Xunfei said in a recent survey on specific objects that in terms of the layout and product planning of cognitive intelligent large models: combined with Xunfei's advantages in deep learning algorithms, knowledge graphs, multi-modal perception, and industry big data over the years Accumulated, in December last year, we further launched the pre-training large model "1+N° task research, "1" is the general cognitive intelligent large model algorithm research and development and efficient training base platform, "N" is applied to education, medical, man-machine Special large-scale model versions for various industries such as interaction, office, translation, industry, etc. Xunfei AI learning machine, Xunfei Hearing and other products will be the first products of this technology to be implemented, and the product level will be carried out on May 6, 2023. release.

Overall analysis: The current price crosses the average price of positions and strengthens in the short term. The strength trend indicator is in the pressure zone and the value is declining, and it may be adjusted strongly in the short term. Recently, the main capital inflow ranks high in the industry, and the bullish sentiment of funds is high, and the probability of strength is high. It is recommended to pay attention to the risk of callbacks, control positions, and focus on fast in and fast out.

News: In terms of news, goodwill at the end of the reporting period was 1.149 billion yuan, goodwill accounted for 7.21% of net assets, and the risk of goodwill impairment was low. In the past month, there have been 15 research reports on individual stocks related to HKUST Xunfei, among which 100% of the institutions have given the stock an overweight or buy rating. The rating has not changed recently, and institutions are very optimistic about HKUST Xunfei. Recently, HKUST Xunfei released a newsletter, Dragon and Tiger List | HKUST Xunfei's daily limit today, the net purchase of northbound funds was 419 million yuan.

Funding: Recently, it belongs to the state of moderate control of the main force, indicating that the funds are relatively optimistic. The main capital inflow ranks high in the industry, and the bullish sentiment of funds is high, and the probability of strength is high. The main funds have obviously increased their positions, and they have a strong willingness to see more. The accumulation of main funds in the industry has increased significantly, and there are opportunities for the sector to rise. The willingness to inflow large funds is firm, and attention should be paid to short-term opportunities. The inflow of Land Stock Connect is relatively strong, and this type of funds has a certain degree of forward-looking, so pay attention to opportunities in the later stage. Large inflows from the north direction, this type of funds have a certain degree of forward-looking, pay attention to the upside space in the later period. The two financings have a strong attitude towards capital inflows. The quarterly shareholdings of institutions have increased month-on-month, which means that institutions are optimistic about the company's development and can pay attention to medium-term upside opportunities. The latest news of HKUST Xunfei [HKUST Xunfei (Gongqingcheng) AI Science and Technology Innovation Base Project Signed and Settled in Jiangxi] On March 24th, HKUST Xunfei (Gongqingcheng) AI Science and Technology Innovation Base Project signed a contract and settled in Jiangxi. According to the agreement, HKUST Xunfei will jointly build an innovation and entrepreneurship achievement transformation center with Gongqing City, plan and build the "HKUST Xunfei (Gongqingcheng) AI Science and Technology Innovation Base" in Gongqing City, and arrange more resource elements and innovative projects in Gongqing City. Qingcheng helps attract and incubate upstream and downstream eco-enterprises, cultivates artificial intelligence characteristic industries, and provides entrepreneurial guidance and technical empowerment for teams in the Gongqingcheng Mass Innovation and Entrepreneurship Base.

Based on the above analysis, it can be suggested that the current digital economy is crowded in the short term. At this point, I think: you can compare the congestion with new energy last year. Although there is congestion in the short term, it is far from receding. First of all, judging from the rising time and rate of increase, Ai is far from reaching the rising time and height of new energy wind power storage. Last year, when the turnover of new energy accounted for 40%, the actual new energy has been rising for more than 3 years, and there are many 10-fold stocks, such as Sungrow Power, Jinlang Technology, Deye Stock, Shida Shenghua, Enjie Stock, Defang Nano, etc., and the digital economy has risen since October last year. There are only a few 2-fold shares, 1-fold shares, the largest increase in the artificial intelligence chip Cambrian-U, and the application algorithm Haitian AAC is only more than 2 times A little bit, far less than a ten-fold stock; secondly, the length and width of the pan-digital TMT industry is wider than that of new energy. Various industries, within the industry, and large, medium and small market capitalizations all rotate in an orderly manner. For example, the previous computing power direction operator China Mobile , China Telecom, data, direction Runze Technology, dataport, etc., optical communication direction Tianfu Communication, Zhongji InnoLight, Cambridge Technology, Ruijie Networks, algorithm applications such as video Hikvision, education and voice science and Technology University Xunfei, server ZTE Communications, Inspur Information and other medium and large market capitalization, but on Friday, it turned to computing power chips and small and medium market capitalization to apply algorithms in various scenarios, focusing on Ai+ games, such as Kuncang Wanwei, Chinese Online, etc., market funds through the industrial chain The rotation of various internal sub-sectors alleviates congestion; thirdly, the self-regulation of market throughput eases congestion. For example, the increase in GPT pan-tech has been maintained at 800 billion before, while the entire TMT volume can account for 40% on Friday. However, the volume can reach more than 1 trillion, and the market increment has increased by 200 billion, which can be gradually released to alleviate congestion; finally, digital economy artificial intelligence is still in the initial stage of penetration from 0 to 1 from the perspective of industrial trend development. Not far from 10, 20. Accordingly, the People's Daily published an article to fuel the flames for the development and application of artificial intelligence.

Finally, how does iFLYTEK grasp the second wave of rapid rise in the hot sector in the near future.

5. The future direction of the domestic artificial intelligence industry

5.1. The future trend of the domestic artificial intelligence industry

With the continuous development of technology and the continuous expansion of application scenarios, the development prospects of artificial intelligence in China are very broad. China's AI industry will continue to grow rapidly in the future and is expected to become one of the most important AI research and application centers in the world. According to the "China New Generation Artificial Intelligence Development Plan" issued by the Chinese government, by 2025, the overall scale of China's artificial intelligence industry will exceed 1 trillion yuan, becoming one of the important pillar industries of the national economy. Here are a few aspects of the future direction of China's domestic AI industry:

(1) Expansion of application fields: With the continuous development of artificial intelligence technology, it will be applied to more industries and fields, such as medical care, finance, education, urban management, etc., thereby promoting digitization, intelligence and innovation in various industries sexual development. . Especially in the construction of smart cities, artificial intelligence technology will play a more important role.

(2) Formation of industrial ecology: In the future, the artificial intelligence industry will gradually form a complete industrial ecology, including the improvement of chips, hardware,

algorithms, platforms, etc., so as to promote the coordinated development and innovation of the entire industry. In the artificial intelligence industry, there will be Strengthen cooperation and integration to form a more complete industrial chain, and the cooperation and alliance between enterprises will also be strengthened.

(3) The emergence of innovation models: In the future, China's artificial intelligence companies will adopt more open innovation models, including open source, sharing, and joint research and development, to promote the rapid development of artificial intelligence technology.

(4) Breakthroughs in basic technologies: In the future, artificial intelligence technology will continue to make breakthroughs, especially in deep learning, speech recognition, machine translation, computer vision, etc., strengthen basic research and core technology research, and improve technical level and core competitiveness, which will help improve the intelligence and universality of artificial intelligence.

5.2. The impact of ChatGPT on the future direction of the domestic artificial intelligence industry

5.2.1. The role of ChatGPT in the industry

ChatGPT can be used as an artificial intelligence technology to help people interact with natural language in various situations, such as in intelligent customer service, virtual assistants, chatbots and speech recognition. This will help promote the application and development of artificial intelligence in the service industry, further improve the degree of intelligence, and improve efficiency and service quality.

Secondly, ChatGPT can be used for research and application in the fields of natural language processing, speech recognition, knowledge graph, etc., to promote the development and innovation of artificial intelligence technology. In the future, artificial intelligence technology will become more mature and widely used, bringing more changes and innovations to all walks of life.

Finally, ChatGPT can also be used as a tool to educate and popularize artificial intelligence knowledge, providing people with better learning experience and knowledge acquisition channels. This will promote the cultivation and development of artificial intelligence talents, and promote the further development and growth of the domestic artificial intelligence industry.

5.2.2. Development prospect of ChatGPT

The continuous development and popularization of natural language processing technology will promote the wide application of ChatGPT. ChatGPT has been used in various scenarios, including intelligent customer service, chatbots, voice assistants, automatic translation, and more. With the continuous development of natural language processing technology, there will be more and more application scenarios of ChatGPT.

The continuous improvement of model performance will promote the further application of ChatGPT. With the continuous development of deep learning technology, the performance of language models is also continuously improved. This will allow ChatGPT to play a greater role in a wider range of scenarios.

More training data will help the further optimization of ChatGPT. At present, ChatGPT has used a large amount of training data for training. However, as the data continues to accumulate, the performance of ChatGPT will also continue to improve.

The continuous optimization and upgrading of ChatGPT will enhance the effect and quality of its application. With the development of technology, ChatGPT's algorithm and architecture will also be continuously improved and optimized to improve its effect and quality in various scenarios.

6. Investment strategy

At present, a series of breakthrough artificial intelligence technologies represented by ChatGPT have become a hot topic in the world. Liu Qingfeng, vice chairman of the National People's Congress and chairman of HKUST Xunfei Co., Ltd., believes that the construction of domestic artificial intelligence big data should be accelerated, and on an autonomously controlled platform, the entire industry can share the dividends of AI as soon as possible.

Considering that artificial intelligence large-scale model technology will provide great opportunities for industrial upgrading for our various industries, and its possible subversive effect on the whole society. Therefore, we propose to carry out overall planning and systematic promotion from seven aspects, including technology research and development, industrial application, computing power platform, data resources, career change, and investment mechanism, so as to accelerate the realization of our cognitive large model from catching up and running to the real world. leaders in certain fields.

(1) Relying on the State Key Laboratory and State Key Laboratory, build an "industry-university-research" collaborative innovation system with leading enterprises as the main body, build an "industry-university-research" collaborative innovation system, and realize "industry-university-research" collaborative innovation. On this basis, through the overall planning and support of major national projects, the research and development of big data models in my country will be promoted.

(2) Promote the demonstration application and scale promotion of artificial intelligence big data technology in various industries. On this basis, quickly establish a batch of innovative applications that can be replicated and promoted.

(3) Relying on my country's independent intellectual property rights of artificial intelligence software and technology platforms, carry out modeling and application research for big data.

(4) Increase investment in public computing capacity platforms, and develop a public list of platforms and a mechanism for accepting tasks. It is recommended to increase investment in national and local public smart computing centers to better meet the computing power needs of universities, research institutes and industries.

(5) Build a national data resource platform, collect the basic data required for artificial intelligence large models, and establish a data sharing mechanism.

(6) In-depth research on the disruptive impact of artificial intelligence on various industries. General artificial intelligence will significantly increase the scope of empowerment and replacement jobs. It is necessary to conduct scientific research and evaluation on possible job replacement and change issues, and appropriately revise the relevant transfer and reemployment systems.

(7) Encourage industrial funds to learn from new shareholder investment agreement models such as OpenAI and Microsoft, explore equity investment agreement models that are more conducive to entrepreneurial teams and core technical backbones striving for their long-term dreams, and build a better technology venture capital ecology and innovation and entrepreneurship environment.

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