

Industry iterative transformation based on big data intelligent platform

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Abstract: Artificial intelligence is the path choice for the development of industry and enterprise intelligence. In the era of intelligence, artificial intelligence and its supporting data technologies are increasingly becoming the driving force of industry development, but these new technologies and data-dependent smart platforms and enabling models are still unclear. Thus further comb and analysis of artificial intelligence evolution path, and big data can assign industry rules of the enterprise, relying on data intensive, super calculate power, combined to form a new artificial intelligence algorithm model data to China, and matching the corresponding data can assign model, implements evidence-based "middle" wisdom and evidence-based "wisdom mode" double empowerment.

1. Introduction to Artificial Intelligence

Artificial intelligence, or AI in English. It is a new technology science that studies and develops theories, methods, technologies and application systems for simulating, extending and expanding human intelligence.

1.1. Artificial Intelligence Classification

Artificial intelligence can be divided into weak artificial intelligence, strong artificial intelligence and super artificial intelligence, their intelligence degree and available range are exponentially growing, all current artificial intelligence belongs to weak artificial intelligence^[1]. Super artificial intelligence, it refers to the computer program through continuous development, gradually become a comprehensive artificial intelligence beyond all human beings in the world. Strong artificial intelligence, also known as general artificial intelligence or full artificial intelligence. Weak artificial intelligence is also known as restricted domain artificial intelligence or applied artificial intelligence.

1.2. Artificial Intelligence Industry Applications

AI has a wide range of applications, including medicine, diagnostics, finance and trade, robotics

control, law, scientific discovery and toys. Many kinds of artificial intelligence applications go deep into the foundations of every industry^[2]. (1) Computer Science: Artificial intelligence has produced many ways to solve the most difficult problems in computer science. (2) Finance: Banks use artificial intelligence systems to organize operations, finance investments and manage property^[3]. (3) Hospitals and medicine: medical clinical use of artificial intelligence systems to organize bed planning. And provide medical information. (4) Customer service: Artificial intelligence is a good assistant for automatic online, which can reduce operations and mainly use natural language processing system.

1.3. Application in Artificial Intelligence Scenarios

Artificial intelligence has been widely used in various fields^[4]. The first application scenario is face recognition, which is a biometric identification technology based on human facial features. It involves image processing and computer vision. The second is biometric recognition technology. Nowadays, voice print recognition is more commonly used. Its main function is to collect the voice print information of the speaker and input it into the database. The third is an intelligent outbound robot, which can automatically initiate a phone call to introduce products to a user group in the form of a natural human voice synthesized by speech. Other applications include robot translation, intelligent thermometers, image search, etc^[5].

2. Big Data Empowerment Literature

Li Wenlian and Xia Jianming (2013) put forward the three-dimensional perspective of "big data" driving business model innovation, that is, the instrumental application, commercialization promotion and expansion of big data resources and technologies lead to industry crossover and integration^[6]. Liu Dan, Cao Jiantong, Wang Lu (2014) introduced IT capability as an intermediate variable and found the impact of big data on different stages of business model innovation. Wu Zeju (2017) In-depth analysis of how Internet big data can enable smart transportation innovation and development through rapid iterative technology. Tan Ying (2019) found that AI and big data have brought the upgrade of work efficiency and intelligent analysis to the financial industry, especially the mining of decision-making elements of financial data. Zhang Jianguo (2018) promoted the reform of customs tax governance by using the "data element empowerment" method of big data technology.

From the perspective of paradigm and innovation, Chen Guoqing et al. (2020) briefly and expounded the important transformation and enabling role caused by big data, which gave birth to a new big data decision-making paradigm^[7]. On the basis of embeddedness theory, Zhang Lingling (2018) proposed marketing paradigm to meet customer needs and create customer deliverable value by guiding enterprises to formulate marketing strategies and strategies. Zhang Jin et al. (2021) focused on the decision-making paradigm and semantic content of data management, and opened up space for data-driven decision-making and innovation by refining the insight of "big data-small data" problem.

Huang Bo (2021) believes that the empowerment of big data for rural governance is reflected in the dimensions of decision-making basis, power operation, governance architecture and governance effectiveness^[8]. Chen Qiang (2020) discussed the impact of data, scene and computing power on the technical empowerment, mode reconstruction and value remodeling of physical bookstores.

3. Big Data Enablement Mode 1.0 TO 5.0

3.1. Big Data Enabling Service

(1) Upstream and downstream division of labor

At the beginning, chip companies were all developed in IDM mode, that is, integrating chip design, manufacturing, packaging and testing into one, such as Intel, Texas Instruments and so on. Due to the magic of Moore's Law, companies such as Qualcomm and Mediatek were born in order to better focus on design and asset-light, which only took charge of chip design and sales. Meanwhile, they brought market demand to companies such as TSMC and UMC, which only took charge of chip manufacturing.

(2) Big Data Professional empowerment Mode 1.0

Data empowerment and big data support should be carried out according to the classification of different majors, whether in the same department or in different departments. Such as terminal empowerment, broadband empowerment, TV empowerment, financial empowerment and so on.

3.2. Big Data Enabling Department

(1) Industrial upstream and downstream integration mode

Detailed division of labor has become the "Pareto" better choice for many industries, and upstream and downstream integration has become an important competitive path to control costs and increase efficiency. It's true for real estate, it's true for lithium, it's true for PV, it's true for cloud computing. Upstream, the server chips are laid out. In terms of system, the Internet of Things server OS is laid out. Downstream IaaS+SaaS, software and hardware technology is a spiral development.

(2) Enabling Mode 2.0 for Big data departments

In order to integrate resources and focus on communication and coordination, no matter it is the market production department, the support department, or even the production department, the data empowerment work is carried out according to the department classification. Such as Sales, Science and Technology, Strategy, Finance, etc.

3.3. Big Data Empowerment Project

(1) Industrial upstream and downstream project mode

Sensetime is known as "enabling all industries" to follow a pure algorithmic AI product model, and more specifically, it is mainly visual AI software. AI software inputs include various types of data, including vision, speech, traffic, medical imaging, data science, and more. Yitu Technology changed from medical image analysis to AI chip + computing power manufacturer, MegVII technology also gradually emphasized its AIOT (AIOT =AI+IoT) positioning.

(2) Big Data Project Empowerment Mode 3.0

In order to focus on key projects of the enterprise, no matter normal periodic projects, major long-term projects, or even short-term emergent projects, data empowerment work should be carried out according to projects. For example, platform online projects, stock operation projects, terminal transfer projects, enterprise mining projects, etc.

3.4. Big Data Enabling Teams

(1) Industry upstream and downstream team model

The business model determines the profit model, and the project contracting model of pure visual AI software almost needs customization. The way shortens the model production cycle to some

extent, but the essence of model customization remains the same. Throughout the global software enterprises such as Oracle and SAP, the customized product model is better than the traditional project model, and the customized team is more targeted and customized than the normal team.

(2) Big data Team enabling mode 4.0

For the transformation of cross-professional or cross-domain teams in enterprises, data empowerment should be carried out according to the classification of team groups, whether it is enterprise-level team groups, departmental team groups, or even upper and lower team groups. Such as wisdom in the Taiwan class group, label portrait class group, campus information class group, etc.

3.5. Big Data Enablement Scenario

(1) Industry upstream and downstream scenario mode

Work force, algorithms, data are the three main factors for the development of artificial intelligence industry, the production model, super center after the ascension work force, also need data model to the ground and the production of its own scenario, and the like, and the big car, huawei HI pure AI data updates, system iterations of business model needs to be one for the user group of the stable ecological commercial scene, This is where AI comes in.

(2) Enabling mode 5.0 for big data scenarios

For scenario planning and layout of users and products, whether it is a general scenario, a specific target scenario, or even a special individual scenario, data empowerment work is carried out according to scenario classification. For example, campus scene, super value scene, transferable scene, government scene, etc.

4. Artificial Intelligence Enabling Platform

4.1. AI Intelligence Center

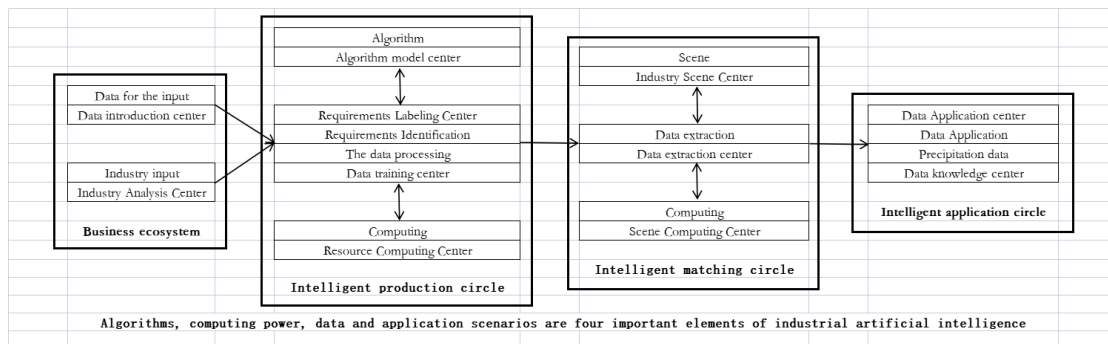


Figure 1: AI intelligence center elements frame

Algorithms, computing power, data and application scenarios are four important elements of industrial artificial intelligence, Big data enables the data blood circulation, internal and external data exchange and data ability incubation in the artificial intelligence center. Detail is shown in Figure 1.

4.2. AI Empowerment Mode and Empirical Evidence

The data import center and data knowledge center are enabled in service mode, the data storage center is enabled in department mode, the data extraction center is enabled in project mode, and the data analysis center is enabled in scenario mode.

The artificial intelligence platform based on big data processing has achieved 30% improvement

in four energy efficiency indicators, industry production matching ratio, algorithm utilization rate, and knowledge reuse rate. In terms of model accuracy, data validity and resource utilization, it has been improved by 40%.

5. Conclusion

This paper studies and designs an artificial intelligence platform based on big data processing to carry the iterative transformation of industrial artificial intelligence. Through the iteration and application development of artificial intelligence in the industry, this paper excavates and extracts different data empowerment modes, and determines the hierarchical and segmental data empowerment modes in the industry ecosystem based on the artificial intelligence platform.

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