

## Analysis of the Influence of Artificial Intelligence on the Employment of College Students in China

#### Zihan Li

Harbin University of Commerce, Heilongjiang Province, Harbin City, 150028, China

1355488755@gg.com

Abstract. With the development of big data, artificial intelligence has made breakthroughs, and a new round of scientific and technological change is profoundly affecting the labor process, labor skills, total employment and structure, income distribution and even the global economic pattern. Nowadays, artificial intelligence is pushing The Times towards intelligent labor, which is not only the replacement of human beings, but also the performance of human intelligence. China must seize the important historical opportunity of artificial intelligence, which is very important for the economic development of our country. The source of development is the progress of science and technology, and the employment of college students is the foundation of life. The employment problem of college students is directly related to a country's economic development, social stability, and people's living standard. In "15" five-year planning period of artificial intelligence is listed as the forefront of scientific research, Xi Jinping, general secretary of the party's 20 report pointed out: "must insist in the development of safeguard and improve people's livelihood, encourage work together to create a better life, constantly realize people's yearning for a better life", therefore, from two aspects of total employment and employment structure of artificial intelligence development on our labor employment, is of great significance.

**Keywords:** Artificial intelligence, labor employment of college students, labor market, labor process

#### 1 Introduction

The new round of scientific and technological revolution, represented by artificial intelligence, has developed at far more speed and breadth than in previous years. In recent years, there have been a lot of studies at home and abroad on how the scientific and technological progress affects the employment of labor force, and conducted in-depth discussion from both theoretical and empirical aspects. However, artificial intelligence is very different from the development of science and technology in the past. It is a new type of scientific and technological progress and the core of the fourth round of scientific and technological revolution. It is more used, which not only replaces the procedural and repetitive work, but also replaces some mental work, which has a more farreaching impact on the labor market.

## 1.1 Summary of the Impact of Domestic AI Development on Labor and Employment

The new generation of scientific and technological revolution represented by artificial intelligence is reshaping the labor process in a new form, and its depth and degree of change to the production process are far from comparable to the scientific and technological revolution in the past. First of all, in the field of manufacturing, the traditional assembly line production model is gradually replaced by the labor employment effect research institute brought by the mass customization manufacturing model represented by artificial intelligence, and a large number of assembly line workers are replaced by industrial robots. [1] At the same time, with the development of intelligent manufacturing, artificial intelligence is no longer limited to manual workers, but instead of mental work. Secondly, the emerging technological revolution represented by artificial intelligence has also profoundly affected the new "platform labor" process under the platform economy. Feng Xiangnan and Zhan Jing(2019) Outside sell the rider for case, through the introduction of "attachment", "price system and rewards and punishment mechanism", "intelligent voice assistant", "big data monitoring" technology, from the perspective of "accurate", reveal "digital platform" through accurate algorithm to manage the labor force, and the "supervision", thus put forward "workers should protect their subjectivity, protect their rights". [2] Based on the six national population censuses. Du Juan(2017) It is believed that the application of artificial intelligence will not only lead to the replacement of low-end labor force by artificial intelligence, but also replace the employment of low-and low-tech and high-tech labor force. [3] Zhang Yuzhe(2019) agrees that after the jobs of the less skilled workforce are replaced, the less skilled workforce will face some social mobility and less competitiveness due to the loss of iob opportunities.<sup>[4]</sup>The "four scientific and technological revolutions" represented by ARTIFICIAL intelligence will certainly restructure the industrial pattern and produce a number of new industries. However, in the short term, artificial intelligence has adverse effects on the decline of the proportion of working population, the imbalance of industrial structure and the imbalance of human capital.in addition,Qiu Yue and Du Hui(2020)Research shows that the development of AI will produce the "alternative employment" effect, because the labor force replaced by AI can no longer return to the original jobs, so the impact of AI on the labor market has always existed. The new scientific and technological revolution is mainly characterized by artificial intelligence, forming a new labor relationship, which has changed the management mode of labor, the establishment of working conditions, and the way of obtaining labor remuneration. The management mode of labor process is transitioning to the digital and accurate management mode.[5]

# 1.2 Summary of the Impact of Foreign AI Development on Labor and Employment

Among economists, there is a long debate over the skill needs of technology for workers. In the theory of human capital, in the production process from agriculture to manufacturing, the capital intensity and organizational complexity are constantly rising, that

is, the development of new technology promotes the skill level of workers. Industrial theory suggests that technological change requires broader and higher-level skills, and that the education system is built to meet this need; automation tends to eliminate tedious work and make it more complex and tight. Foreign scholars have done a lot of theoretical and empirical research on the effectiveness of artificial intelligence. Bluestone and Harrison(1984) Think the low skilled workers are from other industries (especially service industry) technical level of workers is not high, at the same time, in manufacturing, the technical content is not high workers also more and more, can qualified talent and manager position is replaced by automation, and the development of new technology did not make the workers' skills promoted. [6] Acemoglu and Restrepo(2018) The study has found that the impact of AI on the income gap has stage differences. In the short term, due to the comparative advantage of highly skilled workers in new tasks, the substitution of labor force brought by intelligent automation will aggravate income inequality in the short term, but in the long term, tasks are gradually standardized, which can increase the demand for low-skilled labor and reduce skill income inequality. [7] Katz and Murphy (1992) It is believed that with the development of science and technology, the demand for highly educated talents is increasing in China, and the demand for high-quality talents is also increasing, which leads to the polarization of income and work. The "procedural bias" hypothesis focuses on the influence of technological progress on the task allocation, systematically understands the changes of the labor market on the whole, and reveals the impact of technological progress on jobs.[8]

### 2 Analysis of the Influence of Artificial Intelligence on the Employment of College Students in China

## 2.1 Current Situation of Employment Development of College Students in China

The arrival of the era of artificial intelligence has triggered a profound change in the employment of college students. Artificial intelligence has become a new driving force to promote the high-quality development of China's economy and a leap in productivity, and has gradually formed a new employment pattern. Employment is an important issue related to people's life. With the advent of the intelligent era, the scope of artificial intelligence technology replacing labor force is increasingly wider, and more and more people believe that artificial intelligence technology will lead to unemployment of workers, which will inevitably affect the goal of "ensuring employment" and "stable employment". As an important force in the talent market, the employment problem of college students is not only related to their individual growth, but also related to the development and progress of China's higher education cause. In the rapid operation of The Times today, there are two phenomena in the employment of college students: slow employment and lazy employment. Slow employment refers to no immediate employment and reeducation will, temporarily choose to study abroad, volunteer teaching, accompany their parents at home, or do business, and slowly think about their own future.

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There are two types of lazy employment. One is that college students are not interested in their major or have poor academic performance to find a suitable job; the other is that when they find their ability is insufficient, they no longer "work", which has a certain impact on the employment development of college graduates.

#### 2.2 **Development Status of Artificial Intelligence in China**

China's current artificial intelligence industry chain is relatively perfect, and the industrial robot market share accounts for a large proportion. The main contents of the artificial intelligence industry include: the core industry of artificial intelligence, the robot industry, the artificial intelligence and information technology, and the products and services of the combination of industry and social construction. The AI industry can be divided into three levels: the basic layer, the technology layer, and the application layer to support data or computing functions. Carry out research on core technologies and related applications, develop corresponding application technologies for various industries, based on the segmentation scenario, and focus on the commercialization of artificial intelligence technology. As the core representative of intelligent robot, industrial robot is one of the most important technology applications of artificial intelligence. It has been more and more widely used in social production and plays a decisive role in the progress of "machine replacement". [9]According to the China Institute of Commerce and Industry, the market size of China's AI industry will reach 356.6 billion yuan in 2024. China's core AI industry will reach 500 billion yuan in 2023 and is expected to exceed 799.3 billion yuan in 2024, according to a report released by CCID. Think tank, these figures show that China's AI industry is growing at an alarming rate.

#### Analysis of the Development of Artificial Intelligence and the 3 **Employment of College Students in China**

#### 3.1 Artificial Intelligence Promotes the Deskills of Workers

Personal factors of college students are the important factors affecting their employment effect. At present, smart technology is leading the innovation-driven development, accelerating the conversion of old and new growth drivers, and generating many new jobs and jobs. With the rapid development of artificial intelligence, the demand for traditional jobs is declining, while nontraditional jobs are growing. Artificial intelligence technology will continue to decompose, summarize and refine the specific process of labor, try to free it from routine and unconventional work, make complex labor simple, ensure that labor needs, people do their best, to achieve the skills of labor. Through the observation of the labor market, it can be found that the skill structure of the labor force is polarized, that is, the skills of workers develop in the direction of high skills and low skills, and this development will be enhanced with the improvement of intelligence. This means that with the "deskilled" of the workforce, the requirements for high-tech workers are increasing. The contradiction of unskilled labor is the price and conflict that capital and labor must pay to obtain technical control. In order to disskilled workers, capital must pay a certain price. That is to say, the procedural management becomes more and more difficult, and the requirements for high-tech workers are also higher and higher.

## 3.2 The Lack of Cultivation for Employment Changes Leads to Structural Unemployment

Structural unemployment generally refers to a phenomenon of unemployment in the labor market because it does not match the knowledge, skills and ideas of the workers. Under the new normal, we must give full play to science and technology as the primary productive force, talent as the primary resource, and innovation as the primary driving force, so as to promote economic and social development. For a long period of time, due to the emergence of new technologies, the requirements for skills in most new jobs do not match the existing ability of workers, which is a major problem in the current development of China's labor market. In an intelligent society, enterprises have introduced intelligent equipment and technologies, and intelligent machines have replaced the staff with low skill levels. At the same time, the demand for skills is also characterized by high skill level, diversification of crossover skills, and complex cooperation ability between people. This requires college students to have a certain professional knowledge, and have a certain innovative thinking, critical thinking, digital thinking and other intellectual quality, so as to better employment. However, the improvement of college students' intelligent literacy is a relatively long process, not overnight, there are some "scissors", often cause college graduates in the process of employment problems, especially the low intelligence quality, practical ability of college students, it is difficult to cross intelligent technology in the short term of the kind of high skilled and low skilled personnel "gap", thus cause structural unemployment.

# 4 In View of the Comprehensive Development of Artificial Intelligence in China, the Proposal to Stabilize the Employment of College Students

#### 4.1 Improve the Comprehensive Quality of College Students' Labor

In the high-tech manufacturing industry, we should make full use of the advantages of emerging technology, and the cultural quality and intelligence degree have a significant effect on promoting the employment rate of China's high-tech manufacturing industry. It is necessary to strengthen the integration of industry and education, promote the long-term and stable cooperation between universities and manufacturing enterprises, and adjust the professional setting and talent training programs according to the needs of the industry through joint training and targeted training of the industry, so as to introduce more highly educated talents for the high-tech manufacturing industry. Under the new situation of the development of artificial intelligence, our university system is still in a preliminary stage of discussion. We should constantly strengthen the strategy of

rejuvenating the country through science and education and the strategy of talent enhancement, pay attention to the theoretical research on the knowledge of artificial intelligence, and conduct systematic research, and build a perfect and perfect artificial intelligence talent training system. In terms of theoretical research, colleges and universities should implement the idea of "lifelong learning", keep up with the development of artificial intelligence era, take artificial intelligence teaching as the center, and carry out the innovation of AI teaching mode. First of all, we should change our ideas and cultivate diversified, compound and high-quality compound talents. In the constantly changing intelligent society, the training goals and modes of ordinary single-class majors are difficult to meet the needs of the development of The Times. Universities should timely update the concept of talent training, establish the concept of training compound intelligent talents, and aim at cultivating high-quality talents to meet the needs of the development of intelligent industry.

#### 4.2 We Will Improve the Employment Security Policy for College Students

At the government level, we will promote the transformation and upgrading of the industrial structure and create more job opportunities. The wide application and development of artificial intelligence in China plays a decisive role in promoting the transformation and upgrading of China's industrial structure and the expansion of employment opportunities. At the same time, the government and society should also expand the employment channels for college students, create more employment opportunities in social service, public administration, and create broader employment prospects for college students. We should establish a sound employment security system and establish a sound employment service mechanism. At the level of colleges and universities, we should adhere to combine theory with practice and deepen teaching reform. With the rapid development of artificial intelligence technology, practitioners need to have higher quality. [10] The school can send a group of excellent teachers to famous universities at home and abroad for further study, exchange and understand the most advanced international education concepts and educational concepts; on this basis, it is suggested to increase the proportion of experimental teaching in the teaching process, and increase the practical teaching links related to artificial intelligence, so that students can have more practical ability and more effectively promote the ability of contemporary college students to connect theory with practice. At the individual level of college students, we should pay more attention to career development and establish the concept of lifelong learning. With the rapid development of China's economy and the continuous optimization of industrial structure, higher requirements for college graduates. In order to remain invincible in this rapidly changing social environment, we need to plan your career, establish the concept of lifelong learning, improve their comprehensive quality in learning, Employment keeps pace with The Times.

#### 5 Conclusion

At present, the employment situation of college students in China is not optimistic, and their employment view also presents the characteristics of diversification. There are still many problems in the employment work. With the development of artificial intelligence, the skill level of China's labor force is constantly declining, but it will also have a positive effect on the employment of highly skilled labor force and highly skilled labor force, so that the employment skill structure of Chinese college students labor force shows a trend of employment upgrading. We should not only understand the short-term effect brought by the intelligent era to the employment of college students, but also pay attention to its long-term effect. Although the emerging industries and related industrial chains brought by artificial intelligence will greatly change the labor employment pattern in China and promote employment growth, with the popularization of artificial intelligence technology in all walks of life, it will inevitably impact the traditional industrial mode and employment mode, and bring some pressure to employment in the short term. In order to maintain the basic stability of the employment situation, it is necessary to maintain a balanced balance between the stability of the job market and the development of intelligence. On this basis, gradually promote the combination of intelligent technology and various industries to build a benign interaction system between the job market and intelligence. Therefore, we should allocate educational resources and strengthen vocational skill training; improve the employment security system and realize the smooth change of labor skill structure.

#### References

- 1. Chen Long, Liu Gang, Qi Yudong, et al. Artificial intelligence technology revolution: Evolution, Impact, and Response [J / OL]. International Economic Review, 1-43.
- 2. Feng Xiangnan, Zhan Jing. Research on the labor process of the Internet platform in the era of artificial intelligence Take the platform delivery rider as an example [J]. Research on Social Development, 2019,6 (03): 61-83 + 243.
- 3. Du Juan. On the impact of intelligent machines on employment [J]. Open Guide, 2017, (02): 68-72. DOI:10.19625/j.cnki.cn44-1338/f. 2017.02. 015. Gao He and Rong. Social Security in the Era of Artificial Intelligence: New Challenges and New Path [J]. Social Security Review, 2021,5 (03): 3-11.
- 4. Zhang Yuzhe. Employment effect of artificial intelligence and robot and countermeasures [J]. Scientific Management Research, 2019, 37(01):43-45+109. DOI:10.19445/j.cnki.15-1103/g3.2019.01.012.
- 5. Qiu Yue, He Qin. Progress in studying the impact of artificial intelligence on employment and the theoretical analysis framework under the China scenario [J]. China Human Resources Development, 2020,37(02):90-103.DOI:10.16471/j.cnki.11-2822/c. 2020.2. 007.
- Lauri P ."book-review"The Deindustrialization of America: Plant Closings, Community Abandonment, and the Dismantling of Basic Industry[J]. Journal of Political & Military Sociology, 1984, 12(2):348-350.
- Acemoglu D., Restrepo P.. The Race between Man and Machine: Implications of Technology for Growth, Factor Shares, and Employment[J]. American Economic Review, 2018,108(6):1488-1542.

- 8. Katz, L. F., and Murphy, K. M. Changes in Relative Wages 1963—1987: Supply and Demand Factors[J]. Quarterly Journal of Economics, 1992, 107(1):35-78.
- 9. Zhang Yuanzhao. Multiple employment effects of AI development [J]. Southeastern Academic, 2023, (06):170-178.DOI:10.13658/j.cnki.sar. 2023.06.005.
- 10. Jiao Yuanqi. Exploration of the trend of employment substitution and the new mode of talent training based on artificial intelligence technology [J]. Great East, 2024,6 (6):

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