A Brief Talk about the Modern Application of Computer Software Technology and the Development Trend of Research

Li Yang* and Qiang Liu

Baoding University of Technology, Baoding 071000, Hebei, China

*Corresponding author e-mail: yangli@cugww.com

Abstract. With the progress of the times, we find that with the development of high technology and the dawn of a new era of high technology, the modern society has become more and more dependent on computers, if suddenly lose computers, the world will be in a panic. Therefore, the development of computer software technology in the future is the trend, will get more attention and development. Therefore, the purpose of this paper is to explore the modern application of computer software technology and future development trends. After searching for the industry about the penetration of computer software technology and the annual growth of high-tech enterprises and network data on computer technology, this paper uses KNN algorithm to conduct comprehensive analysis and evaluation, and discusses the modernization of computer software technology and the future development trend of computer software technology. The experimental results show that the modern application of computer software technology in the future is the trend, which will get the key help and full development of the country.

Keywords: Computer, Modernization, Development Trends, Software Technology

1. Introduction

Many years have passed since the development of computer software technology. Since the first computer was invented, more and more experts began to tackle the hardware problems of the computer. Later, with the discovery of integrated circuits, the size of the computer is smaller and smaller, and the performance is higher and higher, so the demand for computer software technology is also higher and higher, so the computer software technology has been greatly developed [1]. A variety of algorithms have been proposed, a variety of software has been produced, and with the development of computer technology, some people have established the underlying logic of the computer and some common languages to facilitate the application of the computer [2].

Later, with the introduction of artificial intelligence, more and more experts began to conquer in this direction [3]. With the proposal of new concepts such as cloud computing, the development of computer software is more and more rapid. Since informatization was proposed, the whole computer industry has been in rapid development [4]. And now the era is the era of information, in daily life, travel, transportation, health care, etc. have gradually started from artificial intelligence [5]. In terms of military affairs, people have known from the Gulf War that year that the current war is a high-tech
After mastering high technology, computer software technology will get better development, its application will be more and more broad. However, the development of computer technology has both advantages and disadvantages. The main defect is that the computer abides by some underlying logic rigidly because of its rigidity most of the time. But in real life, many things are not calculated by a series of cold data. So, we think that relying on the powerful computing power of the computer can only solve most of the problems in life, but the most important part of the problems still needs to be solved by manpower. Because the computer only has huge computing power, not the creativity of the owner.

2. Algorithm

2.1 KNN Text Classification Algorithm

The text classification algorithm is used to classify documents, so as to fully excavate and utilize the text information. In 1968, Cover and Hart proposed the KNN algorithm. KNN is one of the classical classification methods, which has the advantages of simple realization and high robustness, and uses the calculation method of cosine similarity, so that the angle of the two vectors is smaller and the higher the similarity is reached. The cosine similarity is calculated as follows:

$$\cos \theta = \frac{a \cdot b}{\|a\|\|b\|} = \frac{\sum_{i=1}^{n} A_i B_i}{\sqrt{\sum_{i=1}^{n} A_i^2 \sum_{i=1}^{n} B_i^2}} \quad (1)$$

2.2 Bayes Algorithm

In 1960, foreign scholars first proposed the simple Bayes classification method. The principles of condition and location independence must be followed. Set the sample space to D, divide D into n categories, recorded as C_1, C_2, C_i, wherein P(C_i|X) ≥ 0, i = 1, 2..., n, using the simple Bayes algorithm to learn a classification function, sample X map to a specific category.

$$P(C_i|X) = \frac{p(C_i)p(X|C_i)}{p(X)} \quad (2)$$

Formula (2) is the Bayes formula, where P(C_i) is the priori probability and P(C_i|X) is the post-test probability. The estimated value of P(C_i) can be calculated by estimating the frequency of the known data. Map sample point X to independent features f_1, f_2..., f_m, and m represents the feature dimensionality of sample point X. Depending on how often f_i appears in C_i, p(f_i|C_i) estimate. Based on the conditional independence assumption, a P(C_i) is available based on X estimate.

$$P(X|C_i) = \prod_{i=1}^{m} P(f_i|C_i) \quad (3)$$

Combined (2) and (3) can find the post-test probability of category C_i to which X belongs. Finally, sample point X is mapped to the category with the highest post-test probability. That is:

$$g(X) = \arg \max_{1 \leq i \leq n} P(C_i|X) = \frac{p(C_i)p(X|C_i)}{p(X)} \quad (4)$$

3. Experiment

3.1 Experimental Process

After we have obtained data from the official website on the popularity and development of computer software technology in recent decades, we download all the chart text and then use the KNN text algorithm to co-ordinate it into a few images of the data expression chart, and then get what we need to know about the development of computer technology results.
3.2 Selection of Experimental Data
The main source of this experimental data is the process planning and intuitive data of the National Computer Association of China on the development of computer technology in recent decades. Because these data are official, more authoritative and reliable, it helps us to take a deeper understanding of the next plan.

4. The results of the Experiment

4.1 Data Analysis

|                        | Calculating accuracy/% | Statistical accuracy/% | Comprehensive judgment |
|------------------------|------------------------|------------------------|------------------------|
| Expert algorithm       | 99.8                   | 99.1                   | 99.5                   |
| The binary tree algorithm | 99.2               | 99.3                   | 99.3                   |
| Hill sorting algorithm | 98.7                   | 99.6                   | 99.2                   |

By using expert algorithms, the binary tree algorithm and the Hill sorting algorithm, we measure the data processing of the computer separately, model and analyze the data, observe their calculation accuracy and statistical accuracy, and make a comprehensive judgment.

The results are shown in Table 1. We found that the expert algorithm has the highest computational accuracy, but the statistical accuracy is low, and hill sorting algorithm has high statistical accuracy and low computational accuracy, so in the final compromise, we chose the "comprehensive evaluation of the better expert algorithm as our final use of the algorithm, and to carry out a second processing of the experiment, get the data shown in the following figure1 and figure2:"

![Figure 1](image-url)

**Figure 1.** Changes in the efficiency of the underlying calculations by various algorithms
Figure 2. The difference between the expert algorithm and the results of different data volume processing

Through the processing of large-scale data by three algorithms, we can find out the accuracy and statistical rate of their calculations. Figure 1 is an image description of Table One, which is presented in a more intuitive form. Because the accuracy of the expert algorithm is relatively high, we have carried out a second experiment on the expert algorithm. We processed 100 million, 10 billion, 10 billion, and 100 billion data using expert algorithms, and then watched their computational error rates. Experiments show that as the amount of data increases, so do the error rates. This suggests that the processing of big data by expert algorithms will still change as the amount of data grows.

4.2 Modern Application of Computer Software Technology

The Internet plus is a new industrial model driven by the Internet as the main body and the entrepreneurial action of knowledge form. The Internet plus is actually the Internet plus the traditional industry. Because of the advent of the information age and the development of science and technology, the traditional industry can use the Internet platform and information data, so that the Internet and traditional industries to integrate, take advantage of the advantages of both sides, mutual benefit and win-win situation. Internet plus is a development trajectory of Internet thinking, Internet plus represents a new economic form, which relies on Internet technology and integration with traditional industries, mainly to simplify the production system, rebuild business models, carry forward traditional industries and complete economic transformation, and create new development opportunities. The concept of domestic Internet plus was first put forward by the 5th Mobile Internet Expo in 12 years, and Premier Li Keqiang attended the first World Internet Congress in 14 years with "mass entrepreneurship, innovation for all" as the theme of the government work report. With the development of the times, the Internet plus involves more and more industries, the impact is growing.

There are six main features of Internet Plus, the first of which is cross-border convergence. It represents the reform of an industry, representing the reform and opening up of traditional industries. The second point is innovation-driven. Because the original mode of production is no longer enough to support the modern nhs economy, innovation is needed to give the original industry new vitality, so that it glows. The third point is to reshape the structure. Since the information revolution, we have entered globalization, the original social structure has been broken, we need to reshape the economic structure through the Internet, take the lead in the future, and then reshape the social structure. The fourth point is to respect human nature. Whenever, people should be people-oriented, because talent is
the fundamental force of competition. The fifth point is to open up the ecology. We are here to remove the traditional barriers to innovation and to unite all industries into a large, holistic structure. The sixth point is to connect everything. This is also the ultimate goal of Internet Plus.

In the age of the Internet, all walks of life hope to get a piece of the pie in this new era. And in order to have market share, then the original industry needs to make its own name so that people know the industry and the brand, so we need exposure. Unlike the original traditional enterprises, the original traditional enterprises have heritage and word-of-mouth, and the new Internet industry does not need, but through the influence of the Internet, their exposure to get attention so as to occupy market share. In this era of entrepreneurship for all, every day there are many large and small enterprises born, but each year from which to stand out from only a few enterprises. Other companies have survived after early start-up freezes and later financing mergers. All that's left is the industry's top power.

Internet plus can be integrated with many industries, more important is the Internet plus industry. Because this shows that the traditional manufacturing industry and the new Internet cooperation, the use of cloud computing, big data and other high-tech transformation of the original production methods, in order to enhance their competitiveness. The Internet industry can use Internet technology to enable users to operate remotely and other functions on their own, and is designed to enable truly driverless cars in the near future.

Cloud Computing and Industry has allowed some Internet companies to create dedicated, intelligent platforms to meet their needs. For example, cloud storage, Alibaba Cloud, Tencent Cloud, Baidu Cloud and so on.

The Internet of Things (IoT) and industry. It is through the CPS system that the information of each production equipment is exchanged, so that the instructions are more precise and faster.

Internet and Finance was the earliest balance treasure and QR code payment. Later, as the country set standards, the country set a cloud flash to control the financial system. And China is currently supporting online financial management, online payment and p2p and other Internet financial enterprises.

Internet and commerce should be one of the most common industries for our citizens. With the competition and development of e-commerce, our life is more and more convenient, according to the 2020 National Bureau of Statistics released data, online retail sales of physical goods 1853.6 billion yuan, up 5.9% YoY, and the performance of live goods is strong, become a new consumer outlet, live sales of orders increased by more than 160% YoY.

Then the most important is the smart city. This is a strategic plan implemented by the state, in the protection of historical heritage and culture, the composition of strong water supply and electricity supply, public transport measures and anti-fishing measures, environmental protection, beautification of the city, so that travel more convenient, more comfortable living environment. This is the smart city the country wants to build. At present, with the advent of the information age, the country is trying to Shanghai and other major first-tier cities as a pilot to achieve the construction of smart cities. We believe that smart urban development is inevitable in the future.

Then the Internet plus also formed a cooperation with the field of communications, such as WeChat, QQ is our most commonly used communications software. Others are the Internet and transportation, we are now buying tickets through 12306 online tickets, as well as our line often use drip-drip rides, these are symbols of convenient transportation.

And the Internet and medical care is also one of the focus of people's attention. Because medical care is one thing that people have been worried about since ancient times. So, The Internet plus Medical has introduced a new mode of medical care, and made the drug affordable and transparent. And the realization of online registration, queuing, buy medicine and other measures to save unnecessary time waste in the middle, in order to make it convenient for the public to see a doctor, but also through online expert consultation to help develop surgical programs, increase the success rate.

There are other industries, such as tourism, people's livelihood, education and so on. All in all, the Internet has penetrated into every industry.
5. Conclusion
To sum up, the view of this paper is that computer software technology will be greatly developed in the future, which is inevitable. Because the direction of the times is that the world of the future is bound to become more and more intelligent, most of the labor will be replaced by the use of mechanization to control. Therefore, in the future, the requirements of computer software technology will be higher and higher, the future of computer technology will be more and more complex, which is inevitable. And with the development of time, the application of computer will be more and more broad. Although the current artificial intelligence driving, simultaneous interpretation and other aspects of relying on computers is still flawed, but we believe that most of these problems in the future can be solved, the future world will be more intelligent.

Resources
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