Retraction

Retraction: Design of New Logistics Control Chain Based on Artificial Intelligence (J. Phys.: Conf. Ser. 1915 022055)

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This article has been retracted by IOP Publishing following an allegation that raises concerns this article may have been created, manipulated, and/or sold by a commercial entity. In addition, IOP Publishing has seen no evidence that reliable peer review was conducted on this article, despite the clear standards expected of and communicated to conference organisers.

The authors of the article have been given opportunity to present evidence that they were the original and genuine creators of the work, however at the time of publication of this notice, IOP Publishing has not received any response. IOP Publishing has analysed the article and agrees there are enough indicators to cause serious doubts over the legitimacy of the work and agree this article should be retracted. The authors are encouraged to contact IOP Publishing Limited if they have any comments on this retraction.

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Design of New Logistics Control Chain Based on Artificial Intelligence

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Abstract. In recent years, artificial intelligence has gradually surpassed human brain computing. It has advanced computing and it gradually replaced manpower. In order to respond to the country’s innovation strategy, artificial intelligence has detonated the logistics industry, which makes the artificial intelligence continuous development. Leading logistics companies at home and abroad have successively created smart logistics, and logistics technology has continuously introduced new technologies. Independent R&D and cooperative R&D have become a way for large logistics companies to enter new fields. Obviously, the application of artificial intelligence technology has greatly reduced the labor cost of logistics enterprises. It also improves logistics efficiency. Therefore, the introduction and application of artificial intelligence in the logistics industry has become an irreversible trend.

Keywords: Artificial Intelligence, Logistics Management, A New Field

1. Introduction
This article combines artificial intelligence with the above problems. It uses multi-part dynamic programming algorithm, short path planning algorithm and inverse nearest neighbor query algorithm to plan the optimal logistics distribution route and design a large-scale logistics system. The results show that our system can not only optimize the efficiency of large-scale logistics systems to a certain extent, but also save a lot of logistics transportation and link manpower and material resources.

2. Research background
2.1. Combination of artificial intelligence technology and logistics system
Since the publication of the "Guiding Opinions on Actively Promoting "Internet +" Actions," the development of various technologies related to artificial intelligence has been officially listed as one of the national development strategies. Among them, the traditional logistics industry based on artificial intelligence technology has become one of the key areas of transformation [1].

Through the integration of artificial intelligence related technologies such as big data and cloud computing, the scale of data that can be processed by the system has been greatly increased, thereby realizing the development of the existing logistics industry to a larger scale. By extracting a large amount of data such as the speed limit of vehicles on the logistics transportation line, the cargo
processing efficiency and storage capacity of each logistics transfer station, traffic conditions, etc., and then using cloud computing and other related technologies for analysis and feature extraction, the results are finally fed back to the next One-stage path planning and optimization are in process. Then, specific practical problems are applied, tested in practice, feedback is given, and then continuous improvement is made to optimize the algorithm. This can not only realize the dynamic planning of the route, but also effectively avoid some problems such as the backlog of goods caused by emergencies on the way, so as to minimize the impact of human factors on the logistics efficiency, and through the self-learning of artificial intelligence, Make the system better respond to emergencies and solve problems.

The combination of artificial intelligence technology and large-scale logistics systems will promote the development of artificial intelligence-related technologies. As technology research and development and practical applications are complementary, so is the development of artificial intelligence [2]. In particular, the transportation cost and transportation efficiency of logistics seem to have reached a bottleneck stage that is difficult to break through. It is these difficulties and obstacles that continuously stimulate the continuous development and breakthrough of artificial intelligence technology; on the other hand, the traditional logistics industry is integrating The advanced intelligent technology can not only improve logistics efficiency, but also increase the flexibility and personalization of logistics transportation. Those singular and boring tasks such as picking goods, warehousing registration, and sorting and distribution can be replaced by artificial intelligence, which greatly reduces various errors under human factors and ultimately increases the performance of each link to a certain extent. Work efficiency [3].

2.2. Research status at home and abroad

Now it is recognized internationally that Dantzig et al. first proposed and studied logistics scheduling problems. They took gasoline distribution as an example to put forward this case-based planning and solution. By arranging the same vehicle to perform multiple transportation tasks, it is possible to complete all orders while ensuring that the transportation path or the corresponding total consumption time can reach the minimum to a certain extent. The key elements are the volume of goods to be transported, transportation schemes, constraints, objective functions, and so on. Related classical optimization algorithms mainly include optimization algorithms and heuristic algorithms. Although the algorithm expands the application range of the algorithm relative to the optimization algorithm, the result of the algorithm operation is not necessarily the optimal solution, which limits the practicality of the algorithm to a certain extent.

3. Logistics system design based on big data and artificial intelligence

3.1. Logistics system design

The logistics system is mainly designed for large-scale logistics transportation: the logistics system is divided into three major sections according to needs: the first part is the need to change the transportation environment represented by fresh food; the second part is represented by document contracts The need to shorten the transportation time as much as possible; the third part is the transportation of raw materials to the representatives who need to shorten the transportation distance as much as possible. The algorithms shown in Figure 1 can be used to solve these three types of requirements. Among them, the setting of the relevant parameters included in the above algorithm is derived from the basic technical support provided by the big data algorithm and the cloud computing platform: based on the large amount of dynamic data information obtained on the cloud computing platform, the road transportation situation is extracted from it, and each express The goods circulation and storage of the station are collected and feature statistics are used to determine various parameters in the programming of the route planning algorithm. In this way, the system will be able to cover a larger service range to a certain extent by expanding the data search range.
3.2. Functional design and content design

The logistics system designed in this article adopts a classification method for different transportation requirements of different goods, that is, different algorithms are designed to solve the different transportation requirements [4]. Among them, the main design functions of the system are divided into three aspects as shown in Figure 1:

![Design block diagram of logistics system](image)

(1) The first category requires changes in the transportation environment. First, make an original path arrangement through the static path planning system, and then according to the items' requirements for the surrounding environment (such as temperature, humidity, etc.), use the cloud computing platform to retrieve the relevant environmental parameters of the area along the way, and divide the original path according to these parameters for multiple sub-sections, the corresponding transportation tool is selected based on the environmental parameters of each sub-section.

(2) The second category has higher requirements for transportation time. The system uses the next short path planning algorithm to solve this problem. The algorithm uses a static planning algorithm to plan the shortest route and the second shortest route, and uses the cloud computing platform to retrieve the driving speed of the main sections of the two routes, the express processing time of each logistics station, and whether the station has queuing problems and The backlog of goods, etc. By comparing the estimated time of the two routes, a shorter transportation plan is adopted [5].

(3) The third category requires the shortest transportation path. This type of transportation is mainly aimed at the transportation of raw materials and other items. The system uses a combination of anti-nearest neighbor query algorithm and static path planning algorithm to solve such problems. First, the anti-nearest neighbor query algorithm is used to search for the source of raw materials with relatively reasonable conditions in various aspects, and then the path planning algorithm is used to find the shortest path, thereby forming the final transportation plan.

4. Implement the core algorithm of the system
4.1. Multi-section dynamic programming algorithm

The operation process of the logistics system is: by determining the delivery location and receiving location of the goods to be transported, the two locations are represented on the map by latitude and longitude, and then the route planning algorithm is used to plan the approximate route between the two locations. According to the different storage methods or transportation methods corresponding to the items at different temperatures (environmental conditions), the corresponding transportation means are adopted [6]. In this way, the quality of the goods to be transported can be guaranteed, and the well-equipped transportation vehicles can be used to the maximum. The above-mentioned route is divided into several sub-sections according to the temperature along the transportation. Each sub-section has a corresponding transportation mode, which can not only flexibly change the means of transportation according to the change of the ambient temperature, but also concentrate a certain amount of scarce resources on the most critical section to a certain extent, so that the infrastructure On the basis of this, improve the efficiency of overall logistics and transportation as much as possible [7].

4.2. Times short path planning algorithm

The system also adds time window constraints on the basis of the traditional shortest path problem solving. Logistics is no longer limited to a single planning scheme in the traditional model, but further realizes the planning and time optimization of multiple paths for the same logistics order, so as to meet the actual needs of users to the greatest extent. On the basis of solving the shortest path problem, the optimal path is further selected by comparing the time spent on the shortest path and the time spent on the next shortest path. In other words, the same express parcel will plan multiple routes during the transportation process and select the most efficient transportation plan while ensuring the shortest route [8,9].

It takes a certain amount of time to wait in line when vehicles pass the toll gate and pay the fees. For example, a car needs to drive from city A to city B, and route 1 is the shortest route, and it needs to pass through n toll gates on this route. Assuming that the work efficiency of each toll station employee is consistent and the waiting time is the sum of the time required for all vehicles in the queue to pay for the car in front of the queue, then the waiting time required for the vehicle at the first toll station is the formula (1) Shown:

\[ \tau_n = \mu_1 + \tau_1 N_1 = n_1 + t \]  

Therefore, the total time it takes for the vehicle to pass through these n toll stations between A and B is shown in formula (2):

\[ \tau = \tau_1 + \tau_2 + \cdots + \tau_n = (\mu_1 + \mu_2 + \mu_3 + \cdots + \mu_n) \times t \]  

To sum up: the total time the car needs to travel from place A to place B is the sum of the travel time and the time spent at the toll station as shown in formula (3):

\[ S_1 = T_1 + \tau \]  

Similarly, there are m toll stations in the secondary short-circuit line 2 from A to B, then the total time spent on route 2 is as shown in formula (4):

\[ S_2 = T_2 + \tau_2 = T_2 + \varphi_1 + \varphi_2 + \varphi_3 + \cdots + \varphi_m = T_2 + (\beta_1 + \beta_2 + \beta_3 + \cdots + \beta_m) \times t \]  

Compare the size of s and g, if \( s > s \), then the car chooses route 2; if \( s < s \), keep route 1 unchanged.

5. Conclusion

On the one hand, the large-scale logistics system affect the planning result of the route by taking time as a constraint, that is, we must not only consider the shortest route, but also the time spent in the transportation process. On the other hand, it can divide the long-distance and large-scale transportation routes into multiple sub-parts, and each part can independently determine the express transportation plan according to the specific local environment [10]. In the end, this will not only improve the efficiency of the entire logistics system, but also greatly improve the flexibility of express delivery methods. It can avoid the interference effects of unexpected events on the design results and enhance the stability of the algorithm. With the vigorous development of Internet commerce, logistics has
become increasingly inseparable from people's daily life and work. With the vigorous development of Internet commerce, people's daily life and work are inseparable from logistics. Nowadays, people are no longer satisfied with the goal of delivering materials to designated locations. They have put forward higher requirements for their quality and efficiency.

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