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Retraction

Retracted: Vehicle Routing Optimization Based on Multimedia Communication and Intelligent Transportation System

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope
(2) Discrepancies in the description of the research reported
(3) Discrepancies between the availability of data and the research described
(4) Inappropriate citations
(5) Incoherent, meaningless and/or irrelevant content included in the article
(6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] W. Huang, Y. Chen, and X. Zhu, "Vehicle Routing Optimization Based on Multimedia Communication and Intelligent Transportation System," *Journal of Advanced Transportation*, vol. 2022, Article ID 4463621, 9 pages, 2022.

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Research Article

Vehicle Routing Optimization Based on Multimedia Communication and Intelligent Transportation System

Weiyuan Huang,[1] **Yanyan Chen**,[1] **and Xun Zhu**[2]

[1]*Beijing Key Laboratory of Traffic Engineering, Beijing University of Technology, Beijing 100124, China*
[2]*China Transport Telecommunications & Information Center, Beijing 100011, China*

Correspondence should be addressed to Weiyuan Huang; yuanrui@emails.bjut.edu.cn

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With the maturity and popularity of network technology and multimedia technology, more and more communication tools and means have entered people's lives. The usual communication tools are often limited to the ability to transmit sound signals. This method does not well express the information between the two parties in some special occasions, such as a noisy environment, where both parties have language or hearing impairments. The multimedia communication system is a technology that combines network communication and multimedia. It utilizes the efficiency of data transmission over the network and the diversity of information in multimedia, making communication between people faster, clearer, and more intuitive. The multimedia communication system is an important part of the application to the intelligent transportation system. Intelligent transportation system is a systematic, real-time, accurate, interactive, and extensive traffic management system established by the comprehensive use of modern high and new technology in the transportation system. With these characteristics, intelligent transportation system has increasingly become an important means to solve modern traffic problems. Based on multimedia communication and intelligent transportation system, this article optimizes the vehicle path and realizes the application of intelligent transportation. The proposed intelligent transportation system realizes functions, such as vehicle speed detection, vehicle behavior semantic analysis, license plate recognition by processing video data, and image data acquired based on multimedia communication, and can capture illegal vehicles and then identify illegal vehicles. The license plate is conducive to promoting the management and control of intelligent transportation and reducing the occurrence of traffic accidents.

1. Introduction

With the rapid development of multimedia technology and communication technology, the relationship between them has become more and more close. Multimedia has gradually penetrated into schools, families, and societies, making the relationship between people beyond the limitations of time and space. Multimedia technology integrates and assembles various media modes, making communication and interaction between human and computer, and transforming and disseminating information. The media used include text, graphics, audio, video and animation, as well as the interactive functions provided by the program, which provides people with an omnidirectional and multisensory perception space, greatly improves the man-machine interface, and improves the application level of the computer [1]. Multimedia communication includes two aspects: different from general network, multimedia communication needs special equipment environment; compared with traditional multimedia, computer equipment used in multimedia communication is special [2, 3]. Multimedia communication is different from general multimedia in processing image, sound, and other information. Therefore, the higher image quality required by hardware equipment is determined by the number of tons per second and the size of the image. In image aspect, if the image is played at a frame rate of 30 frames per second, the human eye can see the continuous image. But in multimedia communication system, the playback effect of 30 frames per second is not ideal. We need to use DIV, JPEG, MPEG, and other coding methods to

encode and decode. In terms of speech, the transmission rate of speech is relatively high, generally requiring 10 Kbps to 64 Kbps. If it is a 16 bit high-quality speech signal, it needs to reach a higher rate [3–6]. In addition, multimedia communication integrates computer, network, and multimedia functions, but the hardware devices involved in multimedia communication are various, and the types of networks transmitting multimedia information may also be different. Therefore, the compatibility of multimedia communication devices is required to ensure the synchronization and stability of multimedia voice and image in different networks. In multimedia communication, the characteristics of multimedia, such as integration, interaction, networking, and science-enabled, have made new progress [7, 8].

Whether in developed countries or in developing countries, with the improvement of living standards, more and more people use cars as travel tools, so that the number of global motor vehicles continues to increase, road traffic problems become increasingly serious, bringing a series of traffic problems: traffic road congestion, frequent vehicle accidents, and environmental pollution in the city. Since the reform and opening up, China's social economy has made great progress, and the increasing number of cars has made our country's transportation also face such problems. How to solve the traffic problem has become a hot spot for researchers today [9–12]. The traditional schemes for urban road reconstruction, construction or expansion have become infeasible with the increasing population, and the rate of road growth in China has been unable to meet the growth rate of automobiles. Traffic signs built on the roadside are becoming less and less easy for drivers to recognize in the face of complex traffic conditions and poorly visible weather conditions [13–15]. The main purpose of the intelligent transportation system is to provide drivers with traffic information in front to ensure people's travel safety. The intelligent transportation system (ITS) is actually a new type of transportation system that integrates socialization and informationization and transforms the original transportation system with high technology. The intelligent transportation system with multimedia features makes full use of all advanced technologies for transportation services and more effectively transmits traffic information. The technology is produced for better use by people [14, 16, 17]. Intelligent transportation will also involve many technologies, including biometrics, wireless passive smart card technology, and speech recognition technology. Intelligent transportation will also involve many technologies, including biometric technology, wireless passive smart card technology, and voice recognition technology. Intelligent transportation system (ITS) effectively and comprehensively applies advanced science and technology (information technology, computer technology, data communication technology, sensor technology, electronic control technology, automatic control theory, operational research, artificial intelligence, etc.) to transportation, service control, and vehicle manufacturing and strengthens the connection among vehicles, roads, and users, thus forming a kind of security, efficiency, and environment improvement.

(1) Biometric identification technology [18] refers to the use of computers to identify individuals according to the inherent physiological or behavioral characteristics of the human body. Biological characteristics are the general term of physiological and behavioral characteristics: physiological characteristics are mostly innate; behavioral characteristics are acquired habits. Commonly used biological features are fingerprints, palmprints, facial features, iris, voice, handwriting, and so on. In the future era of network information, not only can a person's identity be accurately identified but also can protect the security of his personal privacy information and realize the characteristics of digitalization and recessiveness. The application of this technology in the design of this multimedia intelligent transportation system can change people's way of travel and information exchange.

(2) Wireless passive smart card technology [19] refers to a kind of media that can store personal information and prove personal identity. There are three types of smart cards: contact smart cards, contactless smart cards, dual-interface smart cards. The application of this technology in multimedia intelligent transportation system can help pedestrians, old and young, use smart cards to alert drivers of information in advance when passing through intersections.

(3) Speech recognition technology [18, 20, 21] can make people get rid of the burden of input information with handtyping, through human voice control computer to complete various operations, and feedback to people in the form of machine voice. In the multimedia intelligent transportation system, when keyboard typing is inconvenient for drivers or pedestrians, the operation based on voice command can play an irreplaceable role and greatly improve the efficiency of people in the traffic environment.

(4) Optical character recognition technology [22] refers to the recognition and input of traffic information without relying on traditional manual methods. Firstly, the text image area is determined at the location of traffic signs, and the characters are recognized by OCR software. This technology is now very mature. Recognition of signs and markings on the road surface by optical character recognition technology is the technology used in this article.

(5) Multimedia network database technology [23, 24] ITS information can be transmitted by text, image, audio, video, data, and other ways and can effectively and systematically manage ITS. Only by understanding and knowing the existing technology and fully exploring the predictability technology, we can make it serve the design better. The above is just to list some technologies that may be applied in this article to design the multimedia intelligent transportation system, so that the technology can serve the design better and the design can serve the people better.

Vehicle routing optimization is an indispensable part of intelligent transportation system and one of the research hotspots in various countries. Through related research, it can be found that the problem of vehicle path planning now mostly depends on artificial intelligence and machine learning. The research on vehicle routing optimization not only helps to solve the social problems that have plagued people all the time, such as energy shortage, traffic congestion, and air pollution, and realize the unity of resources, environment, and efficiency but also can promote the progress of logistics industry and the orderly development of social economy. It is difficult to solve it with normal algorithm because of its different constraints. Vehicle routing optimization problem is one of the typical combinatorial optimization problems. The purpose of this kind of problem is to obtain the optimal solution from the feasible solution set. It is widely used in optimization, scheduling, decision making, resource allocation, and so on. The solution of this kind of problem often requires a long running time and a large storage space, which makes it more difficult to solve this kind of problem. This article will study vehicle routing optimization based on multimedia communication and intelligent transportation system.

2. Application of Multimedia Communication System in Intelligent Transportation

Along with the rapid development of China's economy, the road traffic construction process has obviously accelerated. Despite the continuous expansion of the road area and scale of our country, the growth level of vehicles far exceeds the speed of road construction. For too many vehicles to travel, we should consider more travel safety and effectively recognize the traffic information transmitted by road traffic signs, which is the basis for ensuring safe travel. There are several problems with traffic conditions. The multimedia transportation system is shown in Figure 1:

(1) The growth rate of transportation demand is much higher than that of road facilities. China's dense population has led to a much lower per capita road area than the foreign average. Excessive attention to the construction of roads for expansion, lack of improvement of the road traffic sign guidance system, imperfect road traffic signs, often cause the driver to travel confused, unclear which direction should be driven, mistakenly enter the traffic flow, and other issues.

(2) Road traffic lacks overall system planning. Most of the road construction is a separate system, which lacks communication and information sharing with the construction of nearby provinces and cities. The construction of urban road traffic sign system is a systematic project that requires a complete solution. It is an important issue for whether the relationship can travel smoothly and travel safely. There is a lack of scientific and comprehensive transportation planning strategy, and the construction of road transportation facilities in various provinces is mixed.

(3) The traffic structure is unreasonable. The poor quality of public transport services has led people to find new ways to travel—self-driving. Along with the growth of China's economy, families with private cars are becoming more and more common and become the main mode of travel for families, which also makes the road congestion more serious. The increase in the number of motor vehicles increases the burden of road traffic.

As the problem of traffic travel has been deeply rooted in people's lives and is also an urgent problem to be solved in the development of intelligent transportation construction, the multimedia communication system studied in this article can effectively solve the problems in traffic. Based on multimedia technology, this article can effectively integrate the advantages of multimedia technology into the transportation system, so as to achieve better planning effect. Multimedia is the communication of information between people by fusing more than two kinds of media to stimulate people's multiple senses. It is the manifestation and transmission mode of multiple carriers. For example, text, graphics, images, animation, sound, and video are all kinds of media that directly affect human senses. Multimedia technology is an integrated, real-time, and interactive computer integrated processing technology of text, image, and sound information. Interactive multimedia refers to the technology that not only can receive and select information from the network but also can send information. Its information is transmitted in the form of multimedia, and users and information can interact to get information feedback. The biggest difference between multimedia and traditional media lies in the interaction of human-computer communication. Nowadays, the development of network greatly expands the way of human-computer communication. Interactive multimedia device can receive traffic information transmitted by traffic signs equipped with sensors on the roadside and transfer traffic information by mobilizing people's multiple sensory organs. It is a more human-scale communication media. Through this device, people can be effectively guaranteed accurate and immediate access to traffic information, providing people with a comfortable travel experience. In addition, it also uses high technology to disseminate traffic information through multimedia to improve the adaptability of ITS itself, making traffic signs more flexible and effective, and adjusting the content of traffic information in time to meet the dynamic demand of road conditions.

(1) Intelligent transportation system of multimedia communication has inductive function: Intelligent transportation system of multimedia communication can release the latest traffic information of the road in front of vehicles through intelligent transportation system with inductive function according to real-time road condition, climate, and unexpected events. Mobile terminal in vehicle can be used as the

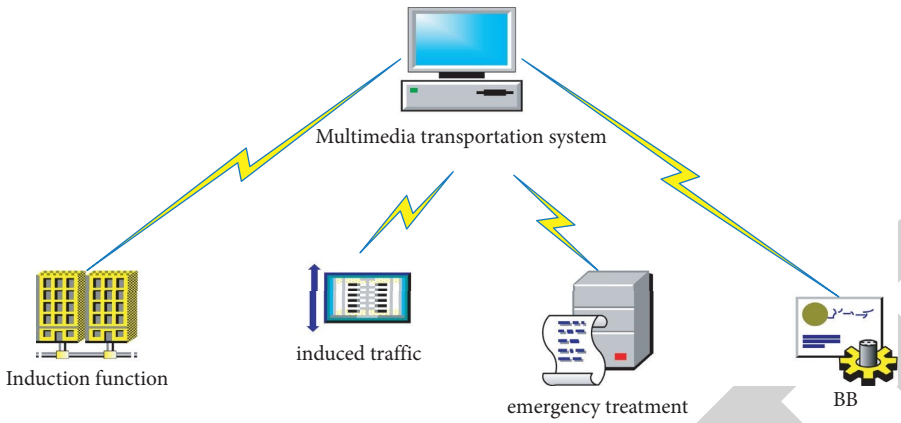

Figure 1: Multimedia transportation system.

receiving carrier of the information released by the inductive intelligent transportation system to transmit it in time. The latest traffic flow guidance information. It is impossible for ordinary ITS to realize these functions. Therefore, the ITS of multimedia communication can be regarded as the guide in the road network.

(2) Intelligent transportation system of multimedia communication effectively induces traffic: Intelligent transportation system of multimedia communication, based on modern advanced technology, makes traffic sign information construct a super information network, collects and sends traffic information in real time, guides traffic in time, and conducts traffic flow reasonably, so that people can use road network efficiently and safely to satisfy comfort. A proactive traffic guidance function for travel purposes.

(3) Intelligent transportation system of multimedia communication and real-time handling of emergencies: It can deal with road traffic incidents in time, such as traffic accidents, traffic congestion, road, and security incidents in adjacent areas. These incidents may lead to a series of major traffic accidents and disturb the normal traffic order. The super traffic information network constructed by the intelligent transportation system of multimedia communication can release traffic information to traffic participants in time and accurately and deal with unexpected incidents in road traffic quickly and effectively according to people's information feedback. It can effectively improve the ability of emergency linkage.

(4) Intelligent transportation system of multimedia communication enables people to receive information on their own initiative: no longer only through visual transmission to drivers but also through the use of drivers' operating habits and the application of multimedia carriers, people will naturally get traffic sign information. Recognition of traffic sign information is no longer due to weather or road complexity leading to misidentification of traffic sign information.

3. Design of Multimedia Communication System in Intelligent Transportation

3.1. Block Diagram and Working Principle of Audio Processing Module. Audio communication plays the role of communication in the intelligent transportation system, and good audio transmission can complete the task efficiently. Audio communication is a basic function of communication between users of a network multimedia system. The basic working principle of the audio communication function is first, the communication parties establish their own audio devices. After the two parties establish a connection through the set network address, the sender's audio device collects the input voice signal and quantizes the analog signal, thereby converting it into a digital signal, and then compressing and encoding the quantized voice data by a voice compression algorithm, and sequentially compressing the compressed digital audio signals according to a network protocol such as RTP/UDP/IP, and finally processing the processed numbers. Signal transmission on the network. The receiver of the session receives the voice data by listening to the sender's port, reorganizes the received voice IP data packet, and then unpacks in the reverse order of RTP/UDP/IP packing and unpacks the data. Decompress according to the sender's compression protocol and finally send the obtained digital signal to the audio device. The audio device performs D/A conversion of the voice digital signal through the audio processing chip of the hardware layer, becomes an analog voice signal, and then sends it to the receiver and converts to sound. Its principle block diagram is shown in Figure 2:

Audio processing module can be divided into the following two parts: audio signal sending part and receiving part. Audio signal transmission part needs to deal with the following key points: (1) the establishment of audio equipment, (2) the collection of audio data, (3) the encoding and compression of audio data, and (4) the transmission of audio data. The audio signal receiving part needs to deal with the following key points: (1) the reception of audio data, (2) the decoding of audio data, and (3) the playback of audio data.

3.2. Intelligent Traffic Monitoring Design in Multimedia Communication System. Embedded system consists of

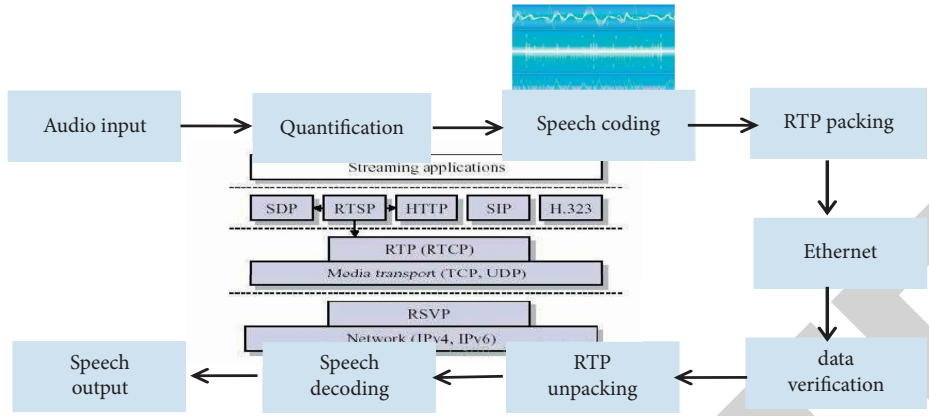

Figure 2: Voice communication flow chart.

hardware and software. It is a device that can operate independently. Its software content only includes the software operating environment and its operating system. The hardware content includes various aspects, including signal processor, memory, communication module, and so on. Compared with the general computer processing system, the embedded system has great differences, it cannot realize the large-capacity storage function because there is no matching large-capacity medium, most of the storage medium used has E- PROM, EEPROM, and so on. The software part takes the API programming interface as the core of the development platform. While the communication is carried out, users can write the content they want to display on touch screen, so as to express the information. The system is based on embedded system, and Ethernet is the data transmission medium. The system collects, encodes, transmit, receive, and decodes speech and text signals. The working principle of multimedia communication system: Callers initiate calls. After the two sides establish a connection, they can normally carry out voice calls, and when the need for graphic communication, they can carry out graphic communication through touch screen. Firstly, the sender inputs the image and text information on the touch screen, and the image and text signal processing module collects the image and text signals and sends them to the microprocessor for processing. The microprocessor *r* first judges whether the image and text data meet the sending standard or not. If it does, it compresses and encodes the image of Jinzhen and then transmit it. In traffic, real-time data will be transmitted to the terminal backstage. Based on multimedia communication, intelligent transportation system combines vehicle speed detection system, vehicle behavior semantic analysis system, and license plate recognition system to form an intelligent transportation system.

Intelligent transportation system includes monitoring, service, and the like. Intelligent transportation monitoring system realizes the functions of vehicle speed detection, vehicle behavior semantics analysis, and license plate recognition by processing video data and image data acquired based on multimedia communication. By considering the high dynamics and uncertainty of the road network state, this article studies how to fully consider and reasonably deal with the dynamics and uncertainty of the complex road network, so as to obtain road network information that is closer to the actual situation and provide effective information for travelers (path wizard). It can also capture illegal vehicles and then identify the license plate of illegal vehicles, which is conducive to promoting intelligent transportation. Management and control to reduce the occurrence of traffic accidents. The design of ITS mainly includes three subsystems: vehicle speed detection system based on video, and vehicle behavior semantic analysis; in the video-based vehicle speed detection system, a virtual coil vehicle speed detection algorithm is improved. Firstly, a virtual coil is added to the fixed position of the camera scene and the actual distance between the two virtual *c* oils is known. When a vehicle passes through a virtual coil, it locates and recognizes the license plate, so as to obtain the time required for the vehicle to pass through a fixed distance and then divides the distance by the time to get the vehicle. In the video-based vehicle behavior semantics analysis system, a vehicle behavior semantics analysis algorithm is designed based on the relationship between vehicle trajectory and lane line. Vehicle trajectory can be obtained by video detection and tracking of moving vehicle targets. Each frame can be extracted, including vehicle location, vehicle speed, and vehicle direction. The signs and markings on the road are classified by the intelligent transportation system. Through the collection of external video data and the analysis of the driver's operation in the inner cockpit, it is finally determined whether the driver has violated the rules. According to the relationship between vehicle trajectory and lane line, capture video through road cameras, semantic analysis of vehicle behavior is realized. When the system detects the abnormal behavior of illegal parking, speeding, illegal headturning and other vehicles, it will alarm in time. The overall design block diagram is shown in Figure 3.

3.3. Intelligent Transportation Service Design under Multimedia Communication System. The predecessor of intelligent traffic systems (ITS) is intelligent vehicle highway system (IVHS). The intelligent transportation system effectively and comprehensively applies advanced information

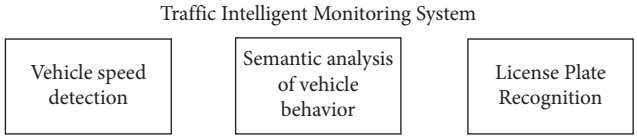

Figure 3: Overall design block diagram of the intelligent transportation system.

technology, data communication technology, sensor technology, electronic control technology, and computer technology to the entire transportation management system, so as to establish a large-scale, all-round function, real-time, accurate, and efficient integrated transportation and management system. The intelligent transportation service system in intelligent transportation, as a system for providing traffic information services, provides various traffic information to traffic management personnel and the public through advanced communication means. It enables the traffic management personnel to grasp the traffic road information status in real time and also allows the traveler to know the various traffic service information provided by the current system through various terminal devices in real time from the initial destination to the destination. The public can easily understand the travel plan through the traffic road information service provided by the intelligent transportation service system, which can complete their own travel more efficiently and time saving. The intelligent transportation service system is mainly composed of intelligent transportation information platform center, information data transmission system, and information release and display terminal. The system structure diagram is shown in Figure 4.

Intelligent transportation information platform center is the information center of the whole intelligent transportation system. It provides interface for traffic information receiving and processing, so as to share data with other systems. It includes collection, filtering, analysis, and processing of various traffic road data. Traffic information collection can be divided into static traffic information collection and dynamic traffic information collection. Static traffic information can be obtained by surveyors using professional measuring instruments. Dynamic traffic information can be divided into mobile and fixed types. The former mainly uses GPS and GIS to collect floating car information and RFID (radio frequency identification) electronic tag to collect traffic information. The information of floating car is basically provided by taxi companies, whereas the latter is collected by relevant departments of the state through ground sensor coil, speed measuring camera, and other equipment.

4. Implementation of Multimedia Communication System in Intelligent Transportation

4.1. Semantic Analysis of Vehicle Behavior. Semantic analysis is a logical stage of the compilation process, and the task of semantic analysis is to perform context-sensitive nature and type review of structurally correct source programs.

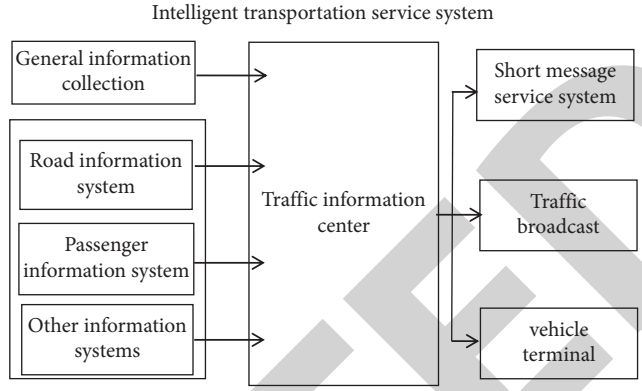

Figure 4: Intelligent transportation service system architecture.

Semantic analysis examines the source program for semantic errors and collects type information for the code generation stage. For example, one of the tasks of semantic analysis is to perform type checking, checking whether each operator has an operand allowed by the language specification, and the compiler should report an error when it does not conform to the language specification. In the intelligent transportation system of multimedia communication system, semantic analysis of vehicle behavior is also indispensable. Abnormal driving behavior of various vehicles is the main cause of road safety accidents on urban roads or expressways. Therefore, to ensure the accuracy and real-time of semantic analysis of vehicle behavior, especially in the sections where safety accidents often occur, such as high-speed intersections, intersections, tunnels, and so on, is of great significance to reduce the incidence of traffic safety accidents and to protect people's economic property and personal safety. Through video detection and tracking of moving vehicle targets, vehicle centroid in each frame image is obtained, vehicle trajectory is synthesized, and vehicle motion features in each frame image are extracted: target location, vehicle speed and vehicle direction; vehicle behavior semantics is analyzed and understood based on the relationship between lane equation and vehicle trajectory, and vehicle behavior semantics table is obtained. At last, it judges whether the vehicle has violated the rules and regulations and realizes the function of alarming the violated rules and regulations. In this article, the vehicle behavior semantics analysis combines the relationship between vehicle trajectory and lane line to analyze and get the vehicle behavior semantics, so first of all, we need to label the lane segment in single-lane traffic video and multilane traffic video based on the experimental data. The labeling results are shown in Figure 5. The line segments in the graph are lane labeling and lane labeling in different background images.

Through the recognition and analysis of the road video and then according to the driver's language recognition, the finally analyzed video and voice will be output to the driver to achieve a multisensory experience.

4.2. Road Condition Inquiry. Road condition inquiry mainly realizes real-time road condition function and congestion section broadcasting function. Real-time road condition is

Figure 5: Different lane marking results.

expressed by different color lines by obtaining traffic flow data of urban main roads. The road condition information is updated automatically every other time. Road condition query needs to use image reception in multimedia communication system. The receiving process of image receiver is just the opposite to the sending process. Before starting the receiving process, the receiving party first creates the receiving thread, waits for receiving the data packet, and after receiving the data packet, parses the image data, and adds it to the image receiving buffer, waiting for the image to be displayed and then read the program and display the image. The road condition query interface is shown in Figure 6.

On the basis of real-time road conditions, the congested road segment broadcast function broadcasts road information in the form of a rolling plate for roads with severe road congestion, especially for blocked roads. By displaying key information such as the name of the road, driving direction, and date and time, the user can intuitively understand the current congested road segment.

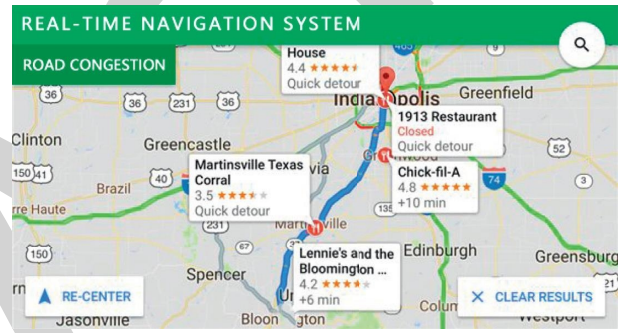

Figure 6: Traffic query interface.

4.3. Driving Route Planning. Path optimization is a fundamental problem in the field of transportation. With the rapid development of social economy and the continuous expansion of urban scale, the contradiction between transportation supply and demand has become increasingly prominent, which brings many inconveniences to pedestrians. Travelers can travel on preset optimized routes, which can not only save travel costs but also play a positive role in improving the traffic efficiency of the entire road network. For self-driving users, because the demand for travel is different, the driving route planning in the system provides three kinds of travel strategies, that is, the route with the least time between the departure point and the destination, the shortest path, and the combination, which is the path of current real-time traffic. For the minimum time path and the shortest distance path, use the service interface provided by the Baidu API, and the user inputs the "departure point" and the "target point," respectively, in the query box, and the system lists similar search results according to the user input, and the user sets the same. You can check the driving directions. Driving route planning is divided into three types according to different travel strategies: minimum time planning, shortest distance planning, and traffic flow planning. The user selects one of the travel plans according to their own needs, enters their own departure place and destination, and clicks on the map to confirm, the driving route plan is shown in Figure 7.

4.4. Use of Road Signs in Multimedia Communication System. Multimedia traffic communication system can help drivers receive information through rational use of human auditory, tactile and other perceptual organs under poor visual conditions such as rain and snow, realize information interaction between human and mobile terminals, effectively understand the traffic safety of expressway, and improve the efficiency of expressway traffic. Intelligent transportation is the inevitable trend of traffic development in the future, and it is the guarantee to effectively realize the safety and smoothness of freeway travel. Only by relying on traffic information network, we can maximize the benefits of expressways and reduce the incidence of traffic accidents. Multimedia communication system networked traffic sign information, so that traffic sign information can be better communicated to drivers through various media transmission modes and carried out corresponding operations, so as to achieve the integration of people, vehicles, and roads. People-centered, interactive informatization of personal needs, whenever and wherever, regardless of weather and

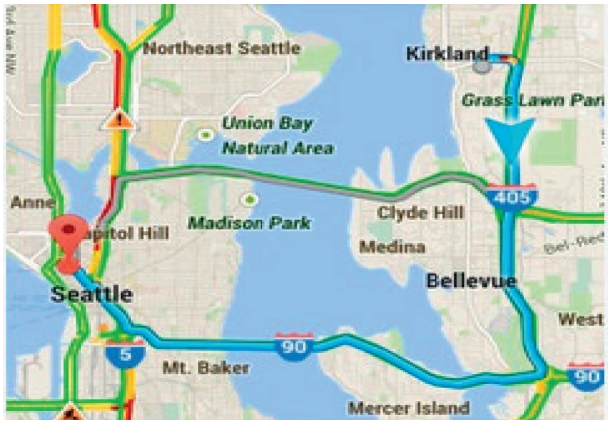

Figure 7: Driving route planning.

Figure 8: Multimedia communication system road traffic sign prompt.

road conditions, can obtain corresponding road traffic information with any party. Through a variety of media means for interactive communication, drivers drive in an information-based network.

Drivers need to get all kinds of traffic information quickly and accurately through traffic signs to understand the current road traffic environment and the traffic environment they are facing. In order to do a good job of corresponding driving operation in time and avoid the inaccurate, untimely, and misoperation of road traffic environment information identification caused by driver judgment error, the multimedia communication system can better solve this problem. Multimedia multimedia communication system realizes road network information sharing, which is convenient and flexible to guide the changing road conditions as shown in Figure 8.

The multimedia communication system can accurately and timely disseminate road traffic information in various ways in the road traffic sign system device and improve the efficiency of inductive recognition of traffic signs. The device is placed in the car and combined with the in-vehicle facilities to allow people to flexibly perceive traffic information.

5. Conclusions

In recent years, with the increasing popularity of vehicles, road traffic pressures have become increasingly apparent, seriously affecting people's travel safety and travel efficiency. In the field of intelligent transportation systems, China has made some efforts and attempts in highway construction, such as card charging, remote video surveillance, and real-time electronic display, but there are still imbalances in the development of traffic in various provinces and highway traffic in various provinces. A series of problems such as the inconsistency of the logo and the overall backward development of intelligent transportation have seriously restricted the development of China's intelligent transportation system. It is precisely because of this series of problems caused by the increase in traffic pressure that vehicle travel path optimization is very important for the general public, emergency rescue personnel, or logistics distribution industry. In view of the backward development of highway construction in the field of intelligent transportation, this article studies the application of multimedia communication system in intelligent transportation and hopes to provide useful help for highway construction development. The main conclusions drawn are as follows:

(1) In the future road of urban traffic development, multimedia communication is applied to intelligent transportation, and information is networked to transmit traffic information in various ways, so that traffic participants are familiar with road conditions and drive vehicles more safely. It will become an important development direction of urban traffic in the future. It will form a traffic information development model for people, cars, and roads and provide a certain reference value for the future development of intelligent transportation.

(2) The multimedia communication system can not only realize voice communication but also can transmit and display text and graphic information handwritten on the touch screen in real time. This feature allows the communicating parties to more intuitively understand what the other party wants to express. The graphic communication function has greatly improved the communication effect of the traditional telephone and is more applicable in traffic use.

(3) Based on the demand analysis of the intelligent transportation service system, combined with the actual road conditions, the functional modules, such as road condition inquiry, driving route planning, public exchange inquiry, pedestrian navigation, and data management, were designed; the database was designed and completed the storage of traffic information, real-time traffic conditions, and data required for dynamic path finding.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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