

Design of Artificial Intelligence Epidemic Big Data Prevention and Control Early Warning System

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Abstract

The artificial intelligence epidemic big data prevention and early warning system of the project includes client, cloud database, information acquisition module and information processing module. The client communicates with the cloud database, the cloud database connects with multiple information collection modules, and the cloud database communicates with multiple information processing modules. The client is used for backstage personnel to watch the information, As well as the feedback and display of background information, the cloud database is used to store the information entered by the information collection module, and the information processing module is used to compare and process the information entered by the information collection module. This project involves the field of epidemic prevention and early warning technology. The artificial intelligence epidemic big data prevention and control early warning system solves the problem that the existing epidemic big data early warning system is inconvenient for real-time detection of health monitoring, personnel positioning and trajectory tracking.

Keywords

Artificial Intelligence; Epidemic Situation; Big Data; Prevention and Control; Early Warning System.

1. Background Technology

It is necessary to prevent and control the transmission route of infectious diseases. Combined with the time, space and population distribution of the epidemic, it is a feasible method to prevent the continuous spread of the disease in the population and region, and to carry out the safe and effective resumption of work and production of enterprises.

According to the severity of the epidemic situation, it is divided into safe area, low-risk area, medium risk area and high-risk area. Different prevention and control measures such as isolation, traffic control and closure are adopted in different places, which makes it difficult for a large number of foreign employees to return to work on schedule. However, after returning from other places, they still need to be isolated within a specified period of time, so they can not return to their posts immediately. Some enterprises need to travel to and fro on business due to the nature of their work, and there is a certain risk of infection. At the same time, the epidemic situation control and production safety pressure of all employees of enterprises on duty are very great. Therefore, it is very important to track the track of the returning workers, record the journey before returning to work, and carry out infection risk assessment for the returning workers from different risk areas. At the same time when the enterprise returns to work and normal production, real-time health monitoring shall be carried out for the returned personnel to timely warn of abnormal physical conditions. Meanwhile, the travel path of those with abnormal physical conditions shall be tracked, and the contact population of those with abnormal physical conditions shall be recorded, so as to avoid the possibility of cross

infection, It is of great significance to help enterprises resume work and control epidemic situation in the process of enterprise operation.

2. Project Content

(1) Technical problems solved

In view of the shortcomings of the existing technology, the project provides an artificial intelligence epidemic big data prevention and control early warning system, which solves the problem that the existing epidemic big data early warning system is inconvenient for real-time detection of health monitoring, personnel positioning and trajectory tracking.

(2) Technical solutions

In order to achieve the above objectives, the project is implemented through the following technical solutions: artificial intelligence epidemic prevention and control early warning system, including client, cloud database, information acquisition module and information processing module. Its features are: the client communicates with the cloud database, the cloud database connects with multiple information collection modules, and the cloud database communicates with multiple information processing modules. The client is used for the backstage personnel to watch the information, as well as the feedback and display of the background information. The cloud database is used to store the information entered by the information acquisition module, and the information processing module is used for the database to compare and process the information entered by the information collection module. The information acquisition module is composed of personal identity information module, body temperature measurement module, personnel travel code module and residence information acquisition module. Through the personnel identity information module, the personnel ID number information, home address and face recognition information are collected, and the body temperature is measured by the body temperature measurement module.

The personnel travel code module is used to judge whether a person has been in or out of a high-risk area, and whether the current health code of the observer. The residential information collection module is used to input the regional information of the current personnel.

The information processing module is composed of personnel information comparison module, mobile phone positioning module, information division module, alarm module, body temperature information comparison module and epidemic personnel management module. The personnel information comparison module is to compare the information entered by the information collection module into the cloud database. If there is an error in the information input, the module can be used to check the information. At this time, the personnel information comparison module will feed back the information in the cloud database to the information collection module, and remind the personnel of information input errors.

The information division module is based on the area information of the entry personnel, so as to realize the regularization of the personnel, and also facilitate the rapid positioning of the later personnel, as well as the rapid search of the personnel.

The body temperature information comparison module compares the body temperature entered by the information collection module with the temperature value of normal personnel. When the temperature value entered is higher or lower than the temperature value far away from the normal, the temperature information comparison module will feed back the data in the cloud database to the client, and at the same time, the information processing module will start the alarm module. The alarm module can remind the personnel to go to see whether there is an epidemic situation. If there is an epidemic situation, the staff can transfer the information of the personnel to the epidemic personnel management module through the client. At the same

time, the information processing module can be used to control the personnel travel code module. Through the travel code module, the health status of the personnel can be advanced. Through the mobile phone positioning module, we can realize the implementation of positioning the personnel's movement track, and store the personnel's movement track to the cloud database, which is convenient for the later staff to access the personnel's trajectory route through the client, as well as the contact between the personnel.

The epidemic personnel management module is a unified storage of the detailed information of the infected personnel, which is convenient for the management of later personnel. The epidemic situation is convenient for the personnel to watch the daily information of the personnel through the client, so as to judge whether there is infection or whether there is improvement.

3. Implementation Mode

Please refer to figure 3

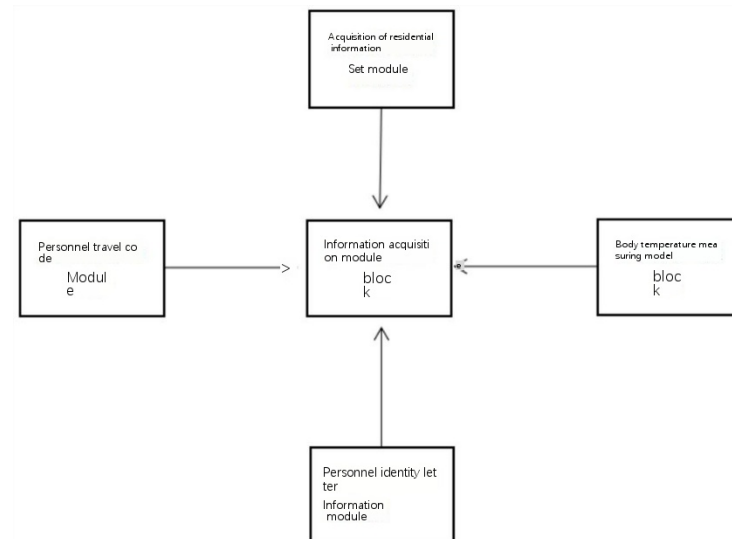


Figure 1. Shows the structure of the information acquisition module of the project

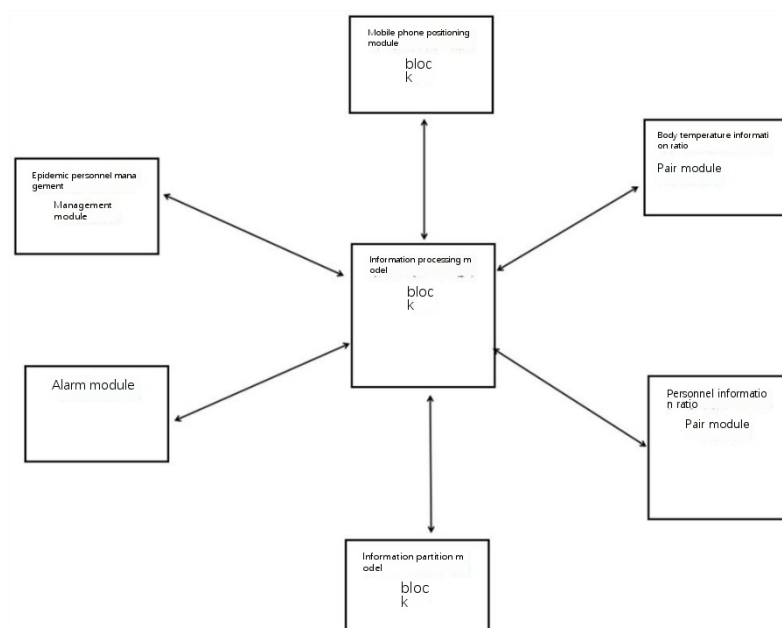


Figure 2. Shows the structure of the information processing module of the project

Example 1:

The artificial intelligence epidemic big data prevention and warning system includes client, cloud database, information collection module and information processing module. The client communicates with the cloud database, the cloud database connects with multiple information collection modules, and the cloud database communicates with multiple information processing modules. The client is used for backstage personnel to watch information and feedback and display background information, The cloud database is used to store the information entered by the information acquisition module, and the information processing module is used to compare and process the information entered by the information acquisition module. It is characterized in that: the information acquisition module is composed of personnel identity information module, body temperature measurement module, personnel travel code module and residential information acquisition module. Through the personnel identity information module, the personnel ID card number information, home address and face recognition information are collected, and the body temperature is measured by the body temperature measurement module. The personnel travel code module is used to judge whether a person has been in or out of a high-risk area, and whether the current health code of the observer. The residential information collection module is used to input the regional information of the current personnel.

Example 2: the difference between the implementation and example 1 is that the information processing module is composed of personnel information comparison module, mobile phone positioning module, information division module, alarm module, body temperature information comparison module and epidemic personnel management module. The personnel information comparison module is to compare the information entered into the cloud database by the information collection module, If there is an error in the information input, the personnel information comparison module will feed back the information in the cloud database to the information collection module, and remind the personnel of the information input error. The information division module is based on the area information of the entry personnel, so as to realize the regularization of the personnel, and also facilitate the rapid positioning of the later personnel, as well as the rapid search of the personnel. The body temperature information comparison module compares the body temperature entered by the information collection module with the temperature value of normal personnel. When the temperature value entered is higher or lower than the temperature value far away from the normal, the temperature information comparison module will feed back the data in the cloud database to the client, and at the same time, the information processing module will start the alarm module, The alarm module can remind the personnel to go to see whether there is an epidemic situation. If there is an epidemic situation, the staff can transfer the information of the personnel to the epidemic personnel management module through the client. At the same time, the information processing module can be used to control the personnel travel code module. Through the travel code module, the health status of the personnel can be advanced. Through the mobile phone positioning module, we can realize the implementation of positioning the personnel's movement track, and store the personnel's movement track to the cloud database, which is convenient for the later staff to access the personnel's trajectory route through the client, as well as the contact between the personnel. The epidemic personnel management module is a unified storage of the detailed information of the infected personnel, which is convenient for the management of later personnel. The epidemic situation is convenient for the personnel to watch the daily information of the personnel through the client, so as to judge whether there is infection or whether there is improvement.

When working, the whole information collection module can be installed into mobile phones, bracelets and other electronic products, and then the body temperature of personnel is monitored through the information acquisition module, and the data is transmitted to the cloud

database, and then the uploaded data is processed through the corresponding information processing module, and the processed data is reflected to the client, So as to ensure whether the personnel have the infection of the epidemic situation or not, at the same time, it can realize the early warning of the epidemic situation.

It should be noted that in this paper, relational terms such as first and second are only used to distinguish one entity or operation from another, and do not necessarily require or imply any such actual relationship or order between these entities or operations.

4. End

The project provides an AI big data prevention and control early warning system. It has the following beneficial effects:

The artificial intelligence epidemic big data prevention and early warning system can install the information collection module into mobile phones, bracelets and other electronic products as a whole, and then monitor the body temperature of personnel through the information collection module, and transmit the data to the cloud database through the data transmission, and then process the uploaded data through the corresponding information processing module, At the same time, it can ensure that the data of the epidemic situation can be handled by the client and whether the data can be handled by the client.

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