Patent Search

Invention Title	A MACHINE LEARNING MODEL FOR VENUE EXPLORATION AND RECOMMENDATION.
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Abstract:

ABSTRACT Our Invention “A Machine Learning Model for Venue Exploration and Recommendation” is a with the rise of demand for scalable standalone system for venue’s exploration and recommendation plays an increasingly important role, for accurate and speedy Venue’s exploration, recommendation and analysis system can help tourism and hospitality sector to solve all the uncertainty associated with Service, information and supply and reduce cost associated with is and produce best results. Most of the business organizations associated with tourism and hospitality sector heavily depend on information base and demands venue’s exploration, recommendation, prediction of trends. The accuracy in venue’s exploration and recommendation provides a big impact in business. Data mining, collaborative filtering and k-means methods are very actual tools in extracting hidden knowledge from an enormous dataset to enhance accuracy and efficiency of their commendation.

Complete Specification

FORM 2
THE PATENT ACT 1970 &
The Patents Rules, 2003
COMPLETE SPECIFICATION
(See section 10 and rule 13)
TITLE OF THE INVENTION:
A Machine Learning Model for Venue Exploration and Recommendation.
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APPLICANT NAME	1 . Dr. Gayatri Mirajkar, Professor and Guide 2 . Pooja Subhash Bansode 3 . Vidya Suresh Parihar 4 . Akshata Dilip Godse 5 . Aishwarya Kishor Kothawale
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FIELD OF INVENTION	COMPUTER SCIENCE
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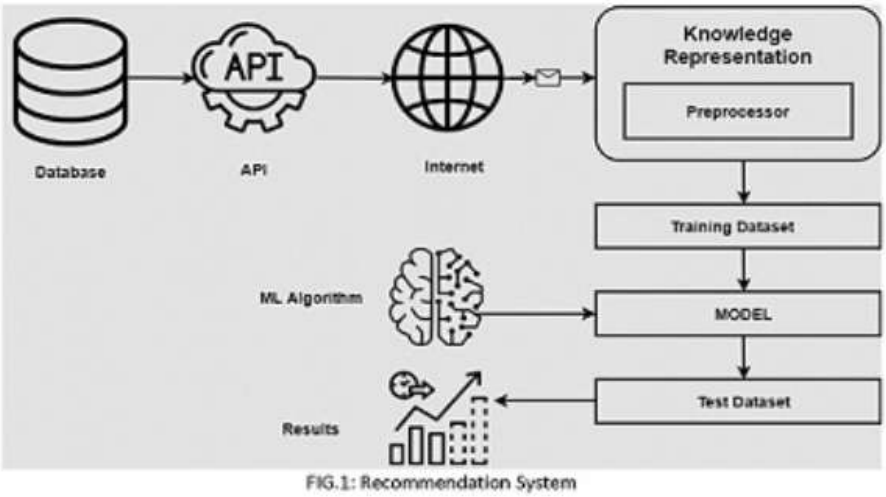

FIG.1: Recommendation System

No. of Pages : 13 No. of Claims : 5

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Renewal of Patent

Reply to Examination Report

Petition under rule 6(6)

Fifth Schedule

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COMPLETE SPECIFICATION
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A Machine Learning Model for Venue Exploration and Recommendation.

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REAMBLE TO THE DESCRIPTION

PROVISIONAL	COMPLETE
The following specification describes the	The following specification Invention. Particularly describes the invention and the manner in which it is to be performed.

FIELD OF THE INVENTION

Our Invention is related to a A Machine Learning Model for Venue Exploration and Recommendation.

BACKGROUND OF THE INVENTION

In recent days, tourism sector becomes the another backbone of the economy. Whenever the tourist visits particular city, they start looking for venues or tourist places to visit during their stay. They primarily look for places based on the venue ratings across all venues and the average prices such that the locations fit in their budget. Thus our aim is to identify such places that someone can visit.

We grew such a versatile independent AI model that can Explore Venues, sort information into various groups, and suggest the settings according to the client's bits of feedbacks. Inescapability and universality of profound learning in recommender frameworks. In industry, recommender frameworks are basic devices to improve client encounter and advance deals/administrations for some internet based sites and versatile applications.

For instance, 80% of motion pictures watched on came from proposals 60% of video clicks came from landing page suggestion in YouTube. As of late, many organizations utilize profound learning for additional upgrading their proposal quality. The presented a profound neural organization based suggestion calculation for video suggestion on YouTube. proposed an App recommender framework for Google Play with a wide and profound model.

OBJECTIVES OF THE INVENTION

1) The objective of the invention is to a “A Machine Learning Model for Venue Exploration and Recommendation” is a with the rise of demand for scalable standalone system for venue’s exploration and recommendation plays an increasingly important role, for accurate and speedy Venue’s exploration, recommendation.
2) The other objective of the invention is to a analysis system can help tourism and hospitality sector to solve all the uncertainty associated with Service, information and supply and reduce cost associated with is and produce best results.
3) he other objective of the invention is to a Most of the business organizations associated with tourism and hospitality sector heavily depend on information base and demands venue’s exploration, recommendation, prediction of trends.
4) he other objective of the invention is to accuracy in venue’s exploration and recommendation provides a big impact in business and also data mining,

collaborative filtering and k-means methods are very actual tools in extracting hidden knowledge from an enormous dataset to enhance accuracy and efficiency of their commendation.

SUMMARY OF THE INVENTION

In proposed system we analysed the venues, real time data fetched from Foursquare API and Zomato API and find meaningful patterns from them. In single web application we are providing slider for setting budget of user then model will recommend venues like historical places, cafe, restaurants, snack center, nearest tourist places, colleges, hotels, malls, shops or shopping centers, gardens, museum and so on using average of budget and ratings. Venues of cities are categorized using machine learning algorithms and depends on city that how many types of venues it contains.

With the always developing volume of online data, recommender frameworks have been an elective procedure to beat such data over-burden. The utility of recommender frameworks couldn't possibly be more significant, given its far reaching reception in many web applications, alongside its expected effect on enhance numerous issues identified with over-decision.

As of late, profound learning has collected impressive premium in many examination eds like PC vision and normal language handling, owing not exclusively to heavenly execution yet additionally the reactive property of taking in highlight portrayals without any preparation.

All the more solidly, we give and devise a scientific categorization of profound learning based suggestion models, alongside giving an extensive synopsis of the best in class. At last, we develop latest things and give new points of view relating to this new thrilling advancement of the field.

Recommender Systems Recommender systems

gauge clients' inclination on things and prescribe things that clients may jump at the chance to them proactively. Proposal models are normally Content-put together suggestion is based principally with respect to examinations across things' and clients' helper data. A different scope of helper data like texts, pictures and recordings can be considered. Cross breed model alludes to recommender framework that coordinates at least two sorts of suggestion systems.

Assume we have M clients and N things, and R indicates the connection framework and Rˆ means the anticipated association grid. Letrui indicate the inclination of client u to thing I, and rˆui signify the anticipated score. In the interim, we utilize a to some degree noticed vector (lines of R) r (u) = {r u1 , ...,r uN } to address every client u, and somewhat

noticed vector (segments of R) r (I) = {r 1i , ...,r M I } to address everything I. O and O − mean the noticed and unseen cooperation set. we useU ∈ R M×k andV ∈ R N ×k to mean client and thing dormant factor. k is the component of dormant variables.

What's more, arrangement data, for example, timestamp can likewise be considered to make succession mindful proposals. Different documentations and indications will be presented in comparing segments.

BRIEF DESCRIPTION OF THE DIAGRAM

FIG.1: Recommendation System
FIG.2: Machine Learning Model for Venue Exploration and Recommendation, Block Diagram
Fig.3: Machine Learning Model for Venue Exploration and Recommendation's

DESCRIPTION OF THE INVENTION

Interpretability. Notwithstanding its prosperity, profound learning is notable to act as secret elements, and giving logical expectations appear to be a truly difficult errand. A typical contention against profound neural organizations is that the secret loads and enactments are for the most part non-interpretable, restricting reasonableness. Notwithstanding, this worry has commonly been facilitated with the coming of neural attestation models and have cleared the world for profound neural models that appreciate further developed interpretability.

While deciphering individual neurons actually represent a test for neural models (not just in recommender frameworks), current situation with the-workmanship models are now able to do some degree of interpretability, empowering reasonable proposal. We examine this issue in more detail in the open issues segment.

Data Requirement.

A second conceivable impediment is that profound learning is known to be information ravenous, as in it requires scient information to completely uphold its rich definition. Notwithstanding, as contrasted and different spaces (like language or vision) in which marked information is scant, it is moderately simple to collect a signicant measure of information inside the setting of recommender frameworks research. Million/billion scale datasets are typical in industry as well as delivered as scholastic datasets.

Extensive Hyperparameter Tuning.

A third grounded contention against profound learning is the requirement for broad hyperparameter tuning. Notwithstanding, we note that hyperparameter tuning is definitely not a select issue of profound adapting however AI overall (e.g., regularization

factors and learning rate also must be tuned for customary network factorization and so forth) Granted, profound learning might present extra hyperparameters now and again. For instance, a new work endive augmentation of the conventional measurement learning calculation just presents a solitary hyperparameter.

Profound Learning Techniques Deep learning can be by and large viewed as sub-field of AI. The embodiment of profound learning is that it learns profound portrayals, i.e., learning various degrees of portrayals and deliberations from information. In this subsection, we explain an assorted exhibit of design standards that are firmly identified with this study.

Multilayer Perceptron (MLP) is a feed-forward neural organization with different (at least one) stowed away layers between the info layer and yield layer. Here, the perceptron can utilize subjective initiation work and doesn't really address rigorously paired as stacked layers of nonlinear changes, learning progressive component portrayals.

Recurrent Neural Network (RNN) is reasonable for displaying successive information. Dissimilar to feedforward neural organization, there are circles and recollections in RNN to recall previous calculations. Variations like Long Short Term Memory (LSTM) and Gated Recurrent Unit (GRU) organization.

Restricted Boltzmann Machine (RBM) is a two-layer neural organization comprising of a noticeable layer and a secret layer. It very well may be handily stacked to a profound net. Confined here implies that there are no intra-layer interchanges in noticeable layer or secret layer.

Neural Autoregressive Distribution Estimation (NADE) is a solo neural organization worked on autoregressive model and feedforward neural organizations. It is a manageable.

System Overview:

Our project uses very dynamic and real time data coming through two major source systems which is Foursquare API and Zomato API, System is highly depends on these source systems to fetch real time data. System also depends on the locally hosted comma separated files (CSV) to store resultant data. System uses many different internal and external libraries for GUI and backend coding.

Proposed algorithm Uses Foursquare API and Zomato API to fetch real time venues data including geospatial data and also uses collaborative filtering and k-means algorithm to recommend venues and create clusters based on the data.

Streamlit GUI used to create dashboard and place results into the folium map format. We also analysed data into different parameters and result of the analysis shown into the dashboard in a graph format so that user can easy understand the data.

Conclusion:

Anticipating the accuracy of our model we achieved extra milestone from existing system. The purpose of this project is to explore the venues mainly focused in Indian cities that the visitors could explore and visit during their stay.

Hence our system identified such venues and places using foursquare API and Zomato API and plotted it into interactive folium maps. Our algorithms classified data into different categories using k- means and SVM algorithm and recommends venues based on the venue ratings and price preferences.

Also our machine learning based standalone web application is capable of handling and pre-processing large amount of data fetched from API. Our system will reduce the cost of expenses and maximizes the accuracy with the minimum risks.

WE CLAIMS

1. The tourism and hospitality industry is badly in need of new data mining techniques and intellectual map based exploration and recommendation model of venue's exploration and recommendation with highest possible level of accuracy and reliability and traditional recommendation systems are difficult to deal with the big data and accuracy of venue's exploration and recommendation. These issues could be overcome by using various recommendation and clustering methods. In this report, we briefly analysed the concept of s venue's data and recommendation systems. On the basis of a presentation evaluation, a best suited recommendation model is suggested for the venue's exploration and recommendation and summarized in terms of reliability and accuracy of efficient techniques taken for recommendation. The studies found that the best fit model is collaborative filtering and kmeans, which shows maximum accuracy in exploration and recommendation through the Foursquare and Zomato API.
2. According to claim1# the invention is to a "A Machine Learning Model for Venue Exploration and Recommendation" is a with the rise of demand for scalable standalone system for venue's exploration and recommendation plays an increasingly important role, for accurate and speedy Venue's exploration, recommendation.
3. According to claim1,2# the invention is to a analysis system can help tourism and hospitality sector to solve all the uncertainty associated with Service, information and supply and reduce cost associated with is and produce best results.
4. According to claim1,2,3# the invention is to a Most of the business organizations associated with tourism and hospitality sector heavily depend on information base and demands venue's exploration, recommendation, prediction of trends.
5. According to claim1,2,4# the invention is to a accuracy in venue's exploration and recommendation provides a big impact in business. Data mining, collaborative filtering and k-means methods are very actual tools in extracting hidden knowledge from an enormous dataset to enhance accuracy and efficiency of their commendation.

ABSTRACT

Our Invention "A Machine Learning Model for Venue Exploration and Recommendation" is a with the rise of demand for scalable standalone system for venue's exploration and recommendation plays an increasingly important role, for accurate and speedy Venue's exploration, recommendation and analysis system can help tourism and hospitality sector to solve all the uncertainty associated with Service, information and supply and reduce cost associated with is and produce best results. Most of the business organizations associated with tourism and hospitality sector heavily depend on information base and demands venue's exploration, recommendation, prediction of trends. The accuracy in venue's exploration and recommendation provides a big impact in business. Data mining, collaborative filtering and k-means methods are very actual tools in extracting hidden knowledge from an enormous dataset to enhance accuracy and efficiency of their commendation.

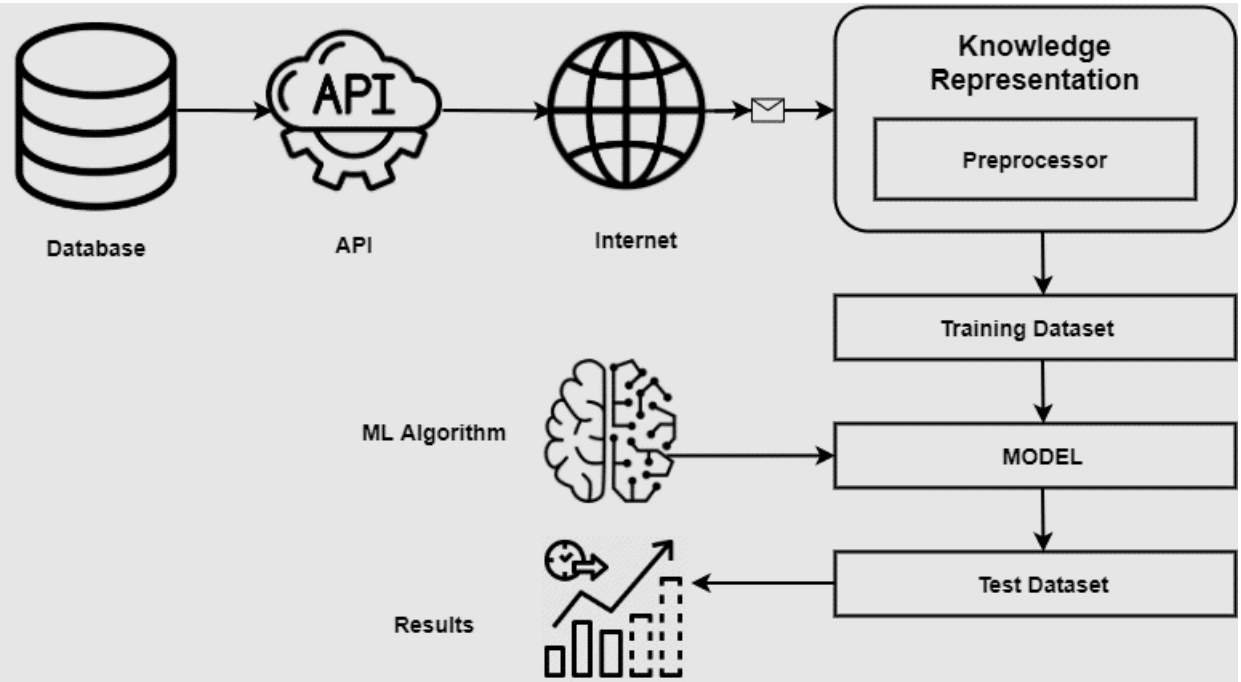

FIG.1: Recommendation System

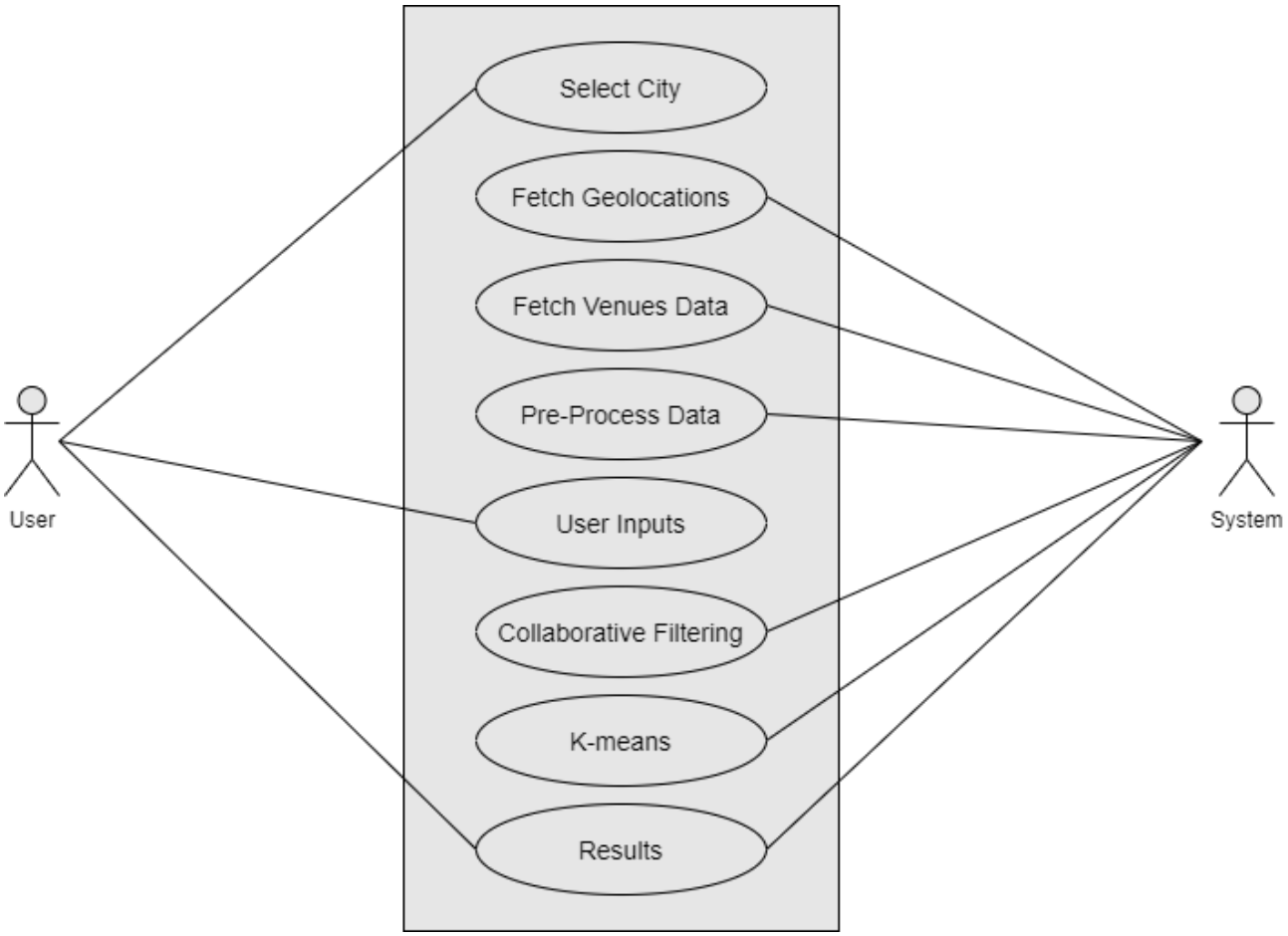

FIG.2: Machine Learning Model for Venue Exploration and Recommendation, Block Diagram

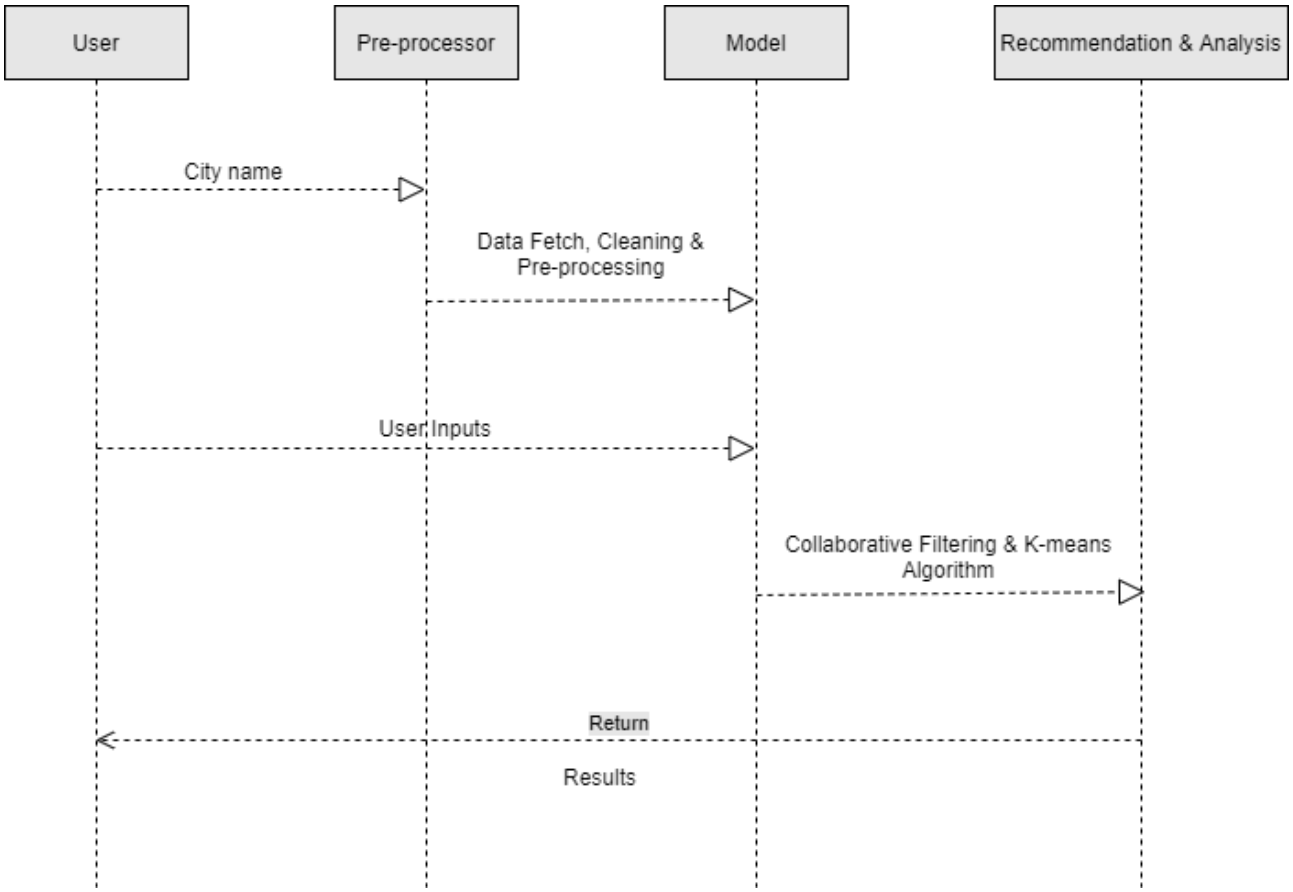

Fig.3: Machine Learning Model for Venue Exploration and Recommendation's

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(57) Abstract :
The present invention is a method of secrete key management in wireless sensor network. Data from a plurality of sensors are send to a plurality of sensor nodes in a wireless sensor network for protecting with secure key pairs between every two nodes. When a new sensor node joins the network, base station distributes identity numbers, corresponding public keys, and one-way functions that the new node adopts and sets up in a similar manner with neighbor nodes to key. The present invention, when a node moves, the neighbor node that was communicating with the key before it was removed, and the mobile node and the new neighbor node set up new secure communication to key. Each link in the network has a unique key, failure nodes cannot reveal all the information about the other links' security. The secure data is to the device of the user through the base station.

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