

Agrimart: Transparent Approach Facilitating Trading for Farmers and Merchants

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Abstract:- Modern day farming industry is not aware of all the trends that are available to make farming easier and fruitful. Farmers get cheated despite of their hard work. Present days, world resembles a worldwide town because of computerization and internet facility. Here, we are interested to present another idea for advanced, well-educated and interested agriculturists who are adopting latest technologies in farming. This not only helps them in farming but also getting a fair price for their efforts and produce. In this project the farmers are able to sell their goods and produce to the merchants giving the most elevated prize identified with the product and the government who is an authorized person can observe all the transaction that take place between the farmer and the merchant by using statistical algorithms instead of collaborative filtering technique. The government sees every transaction details of the merchant to stop black marketing of products and can keep a track of every transaction and total yield. This project intends to give dependable and productive stage or condition to interface with various marketing facility. This fills in as a chance to solve the major problems farmers face in the present world.

Keyword:- Big Data, Black Marketing, E-learning, Market Rate, Weather forecasting.

I. INTRODUCTION

E-farming is the web application that will assist the farmers with performing out the web farming prompting progress and increment in their lifestyle. A Merchant would fill in as a way for the farmers to sell their things in the market. The general population of the farming network is insensible of the new methods and fresh introductions in the horticulture divisions, which would direct the world to progressively imperative statures in the field of farming. In the present market farmers are conned by specialists. Current world resembles a worldwide town because of consistent advancement in innovation. Here, we are intrigued to introduce another thought for cutting edge, knowledgeable and intrigued farmers who are receiving latest advancements in farming. The administration sees every one of the merchant of the shipper to disallow the underground market of the grains. Our undertaking expected to give solid and effective stage or Environment to communicate with various advertising office. In this undertaking the farmers can deal their merchandise

(Crops, vegetables, organic products, and so forth.) to the merchants giving the most raised prize related to the item and the administration who is an approved individual can watch all the exchange that happened between the farmer and the merchant. In our project government is approved individuals who have every one of the experts in regards to transaction perform among farmer and merchant. This fills in as an opportunity to take care to solve every one of the issues that farmers face in the present world.

A. Existing system

There is no computerized framework for the farmer to sell their item. Specialist sells the item to another operator or a merchant at the expense of that market. Each Agent attempts to remove his bonus of that. There is no chance to get for farmer to think about the arrangement and the correct sum at which their item was sold. There is no straightforwardness. No office is available for the farmer to realize the item rates at various markets where they can move their items for accomplishing high benefits. Other recommendation system use Collaborative Filtering (CF) technique for recommendation. Collaborative filtering (CF) is a technique commonly used to build personalized recommendations on the Web. In collaborative filtering, algorithms are used to make automatic predictions (filtering) about the interests of a user by collecting preferences or taste information from many users (collaborating). If we use Collaborative filtering (CF) technique in our project for recommend merchant to farmer then we recognize that this is not best recommendation algorithm for our project because this is not more useful for farmers.

B. Proposed Work

The proposed system will help farmers/merchant to sell or buy their products. Farmer can add their products for selling purpose and merchant will declare their price for buying the products and according to they buy products. Instead of Collaborative filtering (CF) technique we are using first knn algorithm and on the output of knn, we are using farmer side and merchant side recommendation algorithm for best recommendation. With the help of these algorithms we recommend merchant who give best price to farmer. When merchant added product price for buying purpose at that time he/should add price above or same as base price of that particular product. For farmer and merchant registration facility is available. The government authorized person who has the special type of login and checking information of

farmer and merchant. This project is helpful to stop black marketing in agriculture.

II. LITERATURE SURVEY

Singhal et al, proposed Krishi Ville – Android based Solution for Indian Agriculture (2011). This paper expresses the utilization of Information and Communication Technology (ICT) in farming. ICT is a rising field concentrating on the upgrade of farming and provincial improvement in India. The advancement of ICT can be used for giving exact and auspicious applicable data and administrations to the farmers, in this way encouraging a situation for gainful farming. [1].

Saurabh A. et al presented E-Agriculture (2015). This paper clarifies the fundamental focal points of the utilization of Information and communication technology (ICT), and spotlights on various components found for successful use of ICT for agribusiness support up and to amplify benefit of farmers. E-agriculture is a rising field and can assume critical job in enhancement of country and farming area. Authors of this paper plan to achieve ranchers for their mindfulness about use, observation about E-agriculture. E-agriculture is stage for supporting promoting of agricultural items [2].

L. Pradhan et al proposed E-agriculture: A Golden Opportunity for Indian Farmers (2015). This paper investigates the commitment that has been endeavored under e-agriculture and information and communication technology. Information identified with agribusiness part is serious and spatial in nature this information can be legitimately kept up through ICT which will help in farming industry [3].

Soumalya Ghosh et al, proposed Krishi-Bharati: An Interface for Indian Farmer (2014). This paper features the significance of data and correspondence innovation for inspiring the social and conservative standard of the farmer. Proposed system of created interface for the Indian farmer community to get to the agricultural data from the worldwide web vault and store them into nearby storehouse. [4].

III. ALGORITHM

A. KNN (K-Nearest Neighbors) Algorithm:

This KNN algorithm is used to find nearest neighbors. By using this algorithm we find out nearest APMC. On the output of KNN algorithm we applying recommendation algorithm.

➤ Pseudo-code

Consider k as the desired number of nearest neighbors and $S = \{p_1, \dots, p_n\}$ be the set of training samples in the form $p_i = (x_i, c_i)$, where x_i is the d -dimensional feature vector of the point p_i and c_i is the class that p_i belongs to.

For each $p' = (x', c')$

- Compute the distance $d(x', x_i)$ between p' and all p_i belonging to S
- Sort all points p_i according to the key $d(x', x_i)$
- Select the first k points from the sorted list, those are the k closest training samples top'
- Assign a class top' based on majority vote: $c' = \text{argmax}_y \sum (x_i, c_i)$ belonging to S , $I(y=c_i)$
- End

B. Recommendation Algorithm at Farmer Side:

We are recommending merchants to farmer with highest price of product given by merchant. First we use KNN algorithm after that on the output of KNN we are applying this algorithm at farmer side. This algorithm output is recommended merchant to farmer with maximum price of product to sale. It gives maximum profit to farmer.

➤ Pseudo-code:

1. Select crops which farmer want to sale
2. Apply KNN algorithm and find nearest APMC
3. Get all merchant details who registered in this nearest APMC and who added crops which they want to buy
4. Get merchant data and select only those merchant who buy the same crops which are chosen by current farmer
5. We will get final merchant array “merchant_Array”
6. For(int mid: merchant_Array)
 - {
 - i) Get merchant details
 - {
 - a. Get crop info i.e. crop_price given by particular merchant
 - b. Get crop_quantity added by farmer
 - c. Check crop selected by current farmer and find total price
 - d. Total_price = Total_price + (crop_price * crop_quantity)
 - }
 - ii) Display merchant info with Total_price
 - }

C. Recommendation Algorithm at Merchant Side:

We are recommending farmer to merchant with farmer information and crop details. Firstly we are using KNN algorithm and on the output of KNN we are applying this algorithm at merchant side. Output of this algorithm is recommended farmer to merchant with crop details.

➤ Pseudo-code:

1. Select crops which merchant want to buy
2. Apply KNN algorithm and find nearest APMC
3. Get all farmers details who registered in this nearest APMC and who added crops info which they want to sale
4. Get current login merchant info with crop info which he/she added
5. Get crop name and crop price which he/she added
6. Get farmer data which we get in step 3 and select only those farmer who sales the same crops which are chosen by current merchant
7. We will get final farmer array “farmer_Array”

```

8. For(intf_id: farmer_Array)
{
Get farmer info by f_id
{
i) Get crop info with crop quantity
ii) Display farmer details with crop quantity
}
}

```

D. K-means Algorithm:

- k-means clustering is a method of vector quantization, originally from signal processing, that is popular for cluster analysis in data mining. k-means clustering aims to partition observations into k clusters in which each observation belongs to the cluster with the nearest mean, serving as a prototype of the cluster. This results in a partitioning of the data space into Voronoi cells.
- This algorithm is used for clustering. We are using this K-means algorithm at government side for clustering merchant or farmer by crop name in particular APMC.

IV. RESULT

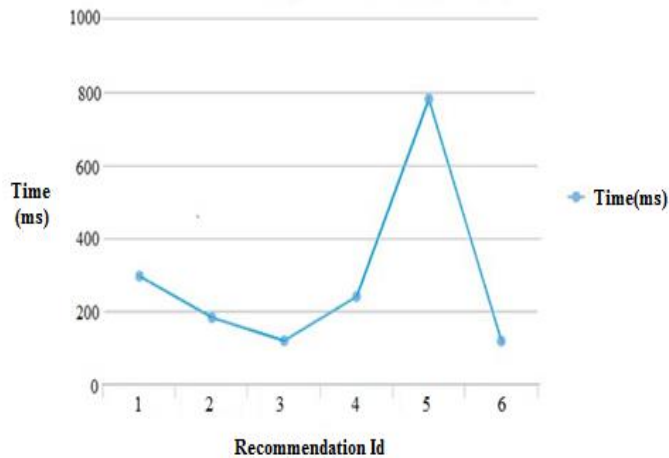


Fig 1:- Time Required for Recommendation

The above Figure 1 shows that time required for recommendation of our proposed system. In above graph X-axis represents Recommendation Id and Y-axis represents time required for recommendation in milliseconds. Above graph shows that our system will work effectively and efficiently and also shows that our system should work more efficiently as compare to other state of art systems.

V. CONCLUSION

We have exhibited “Agrimart: Transparent Approach Facilitating Trading For Farmers and Merchants” which providing more help to all farmers and to stop black marketing. This project will be helpful for farmers to know more about market trends and developments. The site will direct the farmers in every one of the viewpoints, the present market rate of various products and the earned benefit for the sold products. The principle approach of this undertaking is to prohibit the black marketing of the products. The government who is authorized person has easy see the whole exchanges between the farmer and the merchant. Through this they will be dependably in contact of new system and patterns of farming. In any case, some expands; new users may feel some sort of worry about its utilization. By and large this framework is faster, secure and comfortable.

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