International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 08 Issue: 04 | Apr 2021 www.irjet.net p-ISSN: 2395-0072

Android Application for Blood Donor and Acceptor Network with KNN Algorithm

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Abstract - *Application for finding the nearest person available for donation of blood , In this world human achieve more advancement in technology but for this we have to pay in terms of nature disturbance. This activated various pathogens and this is the reason for various disease that required external blood for fulfill of blood this application can contribute some little percentage using machine learning's KNN algorithm. In this COVID19 crises there is the shortage of blood donor .because of this application we can invite covid19 person for the donation of blood .In this pandemic this application is useful for the fulfillment of blood who need it . this application only required support from the donor for this I included the motivational video section . In that we are trying to show the real condition of the blood needed person and also give the access to upload the acceptor video. So donor can easily find out the urgency of blood.*

1. INTRODUCTION

This Application simple implementation of Machine learning Algorithm of KNN, find the distance between two entity(person) is the main function of this application for this I have research how this algorithm works , I understand this have 3 three methods of finding the distance as follows 1.Euclidean .2.Manhattan,3.Minkowski.

But my problem is not solved by anyone of three methods, so I focus to achieve my goal I find Euclidean function useful with some modification. The government is planning to provide a monetary incentive to the medical staff treating corona virus patients in the State apart from providing them insurance cover. Blood supply is required not just for corona virus patients, but also for people suffering from other illnesses. For the benefit of blood required person we add covid19 negative certification upload section in our application which makes it useful for the now days situation.

1.1 Euclidean formula

Distance finding method using Machine learning algorithm KNN. In android application we get co ordinates for the GPS with the permission of particular person we have to find the distance by this co ordinate Google utility is available for this work but source code is not available to finding the solution I tried some calculation data set which I explain following below. We have calculated the distance metrics according to the sum of the Euclidean formula.

$$d= \sqrt{\sum_{i=1}^{n} (x_i - y_i)^2}$$

1.2 Advance Euclidean formula

This is my research for finding the distance of more than two points which is linked together. For this I add more than two point that help us to finding the more accurate distance.

$$d= \sqrt{\sum_{i=1}^{n} (x_i - y_i)^2 + \sum_{i=2}^{n} (x_i - y_i)^2 + \sum_{i=3}^{n} (x_i - y_i)^2 \ldots\ldots\ldots\ldots}$$

Fig: Cascaded Euclidian formula

2. Data table on formula implemented

By using this formula I have calculated the distance between the two entities via multiple points by applying this formula on our data set following are the result of that in form of diagram.

X axis	Y axis	Distance formula	Distance	Nearest or not Where K=3
7	7	(7-3)^2 + (7-7)^2= 16	3	Yes
7	4	(7-3)^2 +(4-7)^2=25	4	N0
3	4	(3-3)^2+(4-7)^2=9	1	Yes
1	4	(1-3)^2+(4-7)^2=13	2	Yes

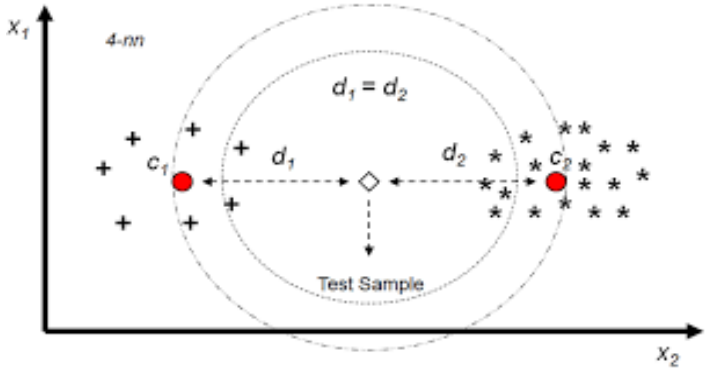

Chart -1: Representation of distance between C1 and C2

k-Nearest Neighbor
Classify (**X**, **Y**, *x*) // **X**: training data, **Y**: class labels of **X**, *x*: unknown sample
for $i = 1$ **to** m **do**
  Compute distance $d(\mathbf{X}_i, x)$
end for
Compute set I containing indices for the k smallest distances $d(\mathbf{X}_i, x)$.
return majority label for $\{\mathbf{Y}_i$ where $i \in I\}$

Formula-1: KNN Algorithm

3. CONCLUSIONS

From this new formula we can conclude that calculating the distance between co ordinates of x axis and y axis is successful. This formula I further trying to implement is android application.

This application is for making the network of Acceptor and donor is this COVID19 crises .There are many people who want to donate their blood but unaware of the procedure of donation because of this pandemic. This App provide the platform for the acceptor as well as donor community .new feature of update of the status of donor where he/she COVID 19 positive.

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