International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 07 Issue: 04 | Apr 2020 www.irjet.net p-ISSN: 2395-0072

Estimation of Calorie Content in a Diet Using Big Data

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Abstract - *Today, the increasing usage of calories is the harmful well-being of a day, which is a significant concern. For one way or another, dietary management tends to sustain human well-being, but it is not enough to preserve all human well-being. The aim is to build a model of a big data knowledge method that uses this technique to assess which food comprises how many calories and how special it is relative to others and how it affects the human good [1] accordingly. This can classify the food and quantify calories using a 100% precision help vector system. When the calculation is done, regular thickness tables calculate the volume of food.*

***Key Words*: Nutrition, Support vector Machine, Big Data Method, Standard Density, Calories, Harmful health.**

1. INTRODUCTION

The solidity device is calorie. Calories refer to the diet with which people receive their energy from the food they consume and the water they use in physical exercise. Calories of prosperity are significant. It's necessary to devour the perfect number. Everyone requires different measures of everyday health, based on age, race, height and frequency of activity. In the United States, people absorb calories from inexpensive food more than 11 percent daily. Foods that are rich in energy but poor in good health provide empty calories [2]. When we realize that there are two kinds namely little calories (cal) and immense calories (lcal) and 1 kcal = 1000 calories. In this paper using the vector source, the calories appreciate from all foodstuffs are calculated or distributed and a train calculation is made. Here, 100% precision is measured when the palatable item was set.

Support Vector Machine

A limited representation of the AI computation vector support machine (SVM) that breaks down details for classification and relapse analysis. SVM is a guided learning technique that diverts knowledge to one of two classifications [7]. An SVM offers a template for organizing the details with both edges as far apart as practicable under the circumstances to be anticipated. In material order, pictures, penmanship identification, and in specific disciplines, SVMs are used. An assistive vector machine is sometimes called an organizational support vector (SVN).

Below are the some applications of Support vector machine:

- Hypertext classification and text
- Classification of different kind of image
- Handwritten character with certain reorganization method
- Protein classification method

2. Literature Review

I may claim that it can be used to quantify nutritious existence in various ways by (state) the Gibbs's free burning vitality or the calculation of ATP provided by the meal. However, the display is to use the heat of the oxidation reaction, which provides fluid water. The conventional nutritious resilience relies on the burning energy of a bomb calorimeter and solutions that often think about the manufacturing efficiency, urea absorption and production and different materials in the pee. Such reforms were drawn up in the late nineteenth century by the American science pioneer Wilbur Atwater [3]. Based on the work manufactured by Atwater, the resilience of foods using 4 kcal / g for starches and protein and 9 kcal / g for lipids has become a crucial activity. The system was subsequently expanded by the United States Department of Agriculture, Annabel Merrill and Bernice Watt who developed a structure to suggest specific calorie modifying variables for different nutrients.

Propose model:

Using a flow chart I have concluded that this conclusion might be a result what am I looking for.

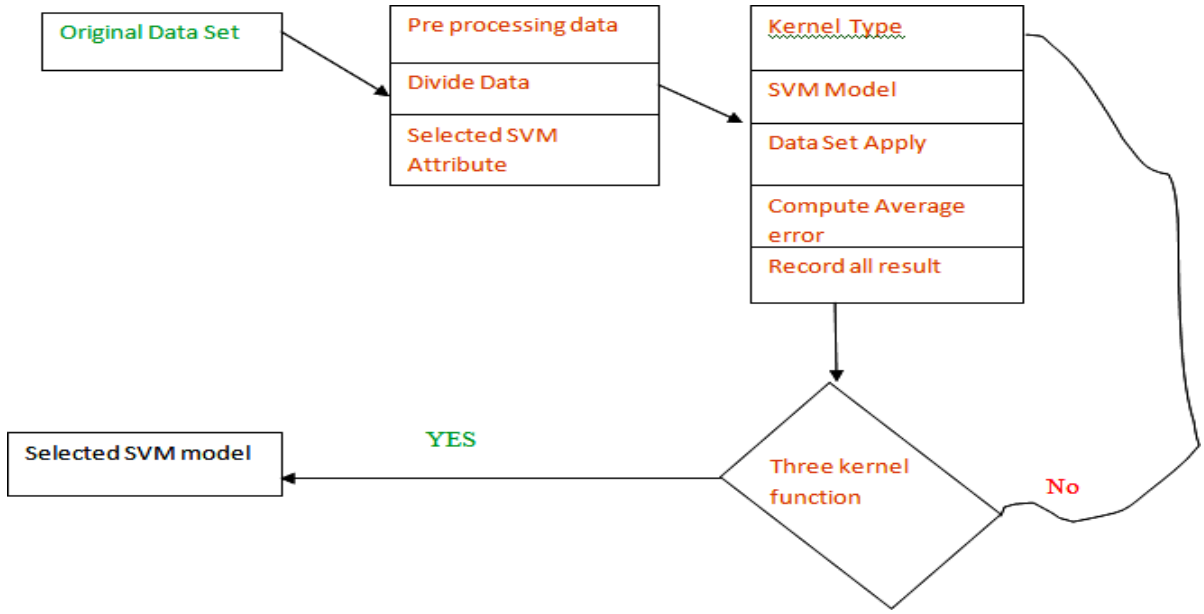


Fig: 1 proposed model for Support Vector Machine

This model described about a single user can calculate the calories value by taking some eatable food item and simulate it up to get the 100 percent accuracy of the data set.

Fig: 2 some input eatable food item

This image is the random data set of food item and taking those as a input data set of SVM.

Table -1: Sample Table format

Food Item	Density	Calorie	Label	Shape
Apple	0.70	62	2	Sphere
Banana	0.84	79	3	Cylinder
Carrot	0.541	49	3	Cylinder
Cucumber	0.541	26	4	Cylinder
Onion	0.613	50	6	Sphere
Orange	0.572	57	6	Sphere
Tomato	0.589	28	7	Sphere

Table – 1 Show the data item of different categories contains calories how much this is a kind of assumption and label of density that particular food item contain define on a tabular form.

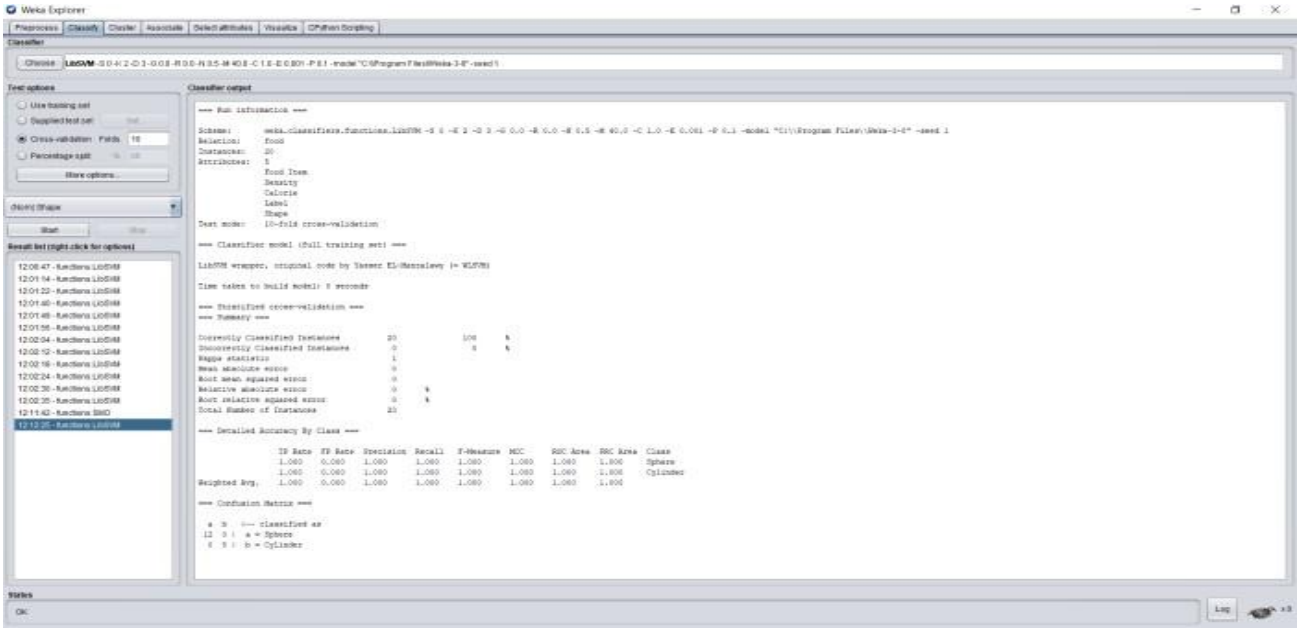
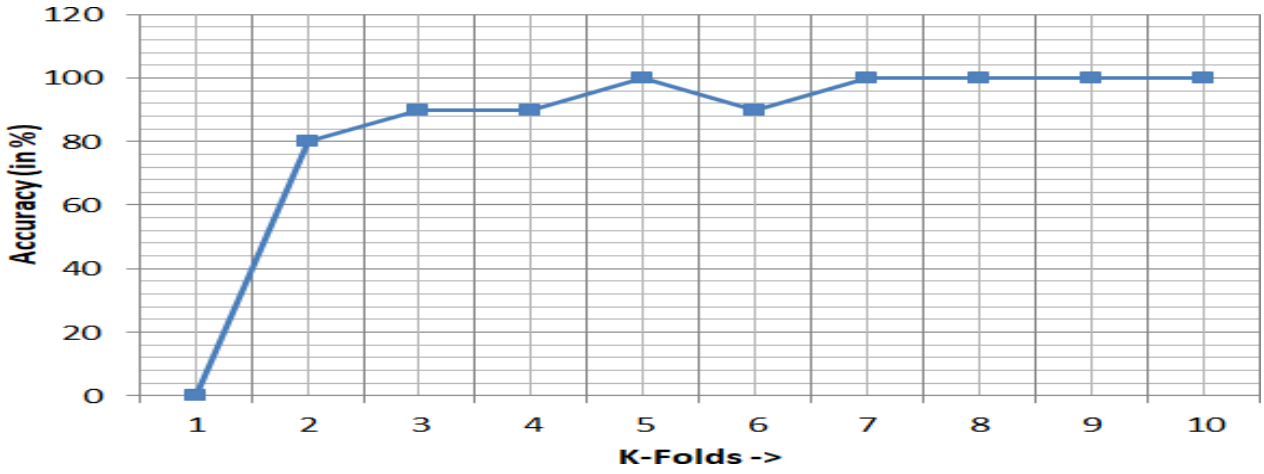


Chart -1: **Fig: 3 Show the result in Weka 3.8 after simulation of SVM data set**

This figure shows the SVM simulation result of twenty instances and gives the 100 percent accuracy. As we know that SMO also a SVM method but it's not the 100percent accuracy because of simulation problem so I decided to take SVM methods. It show the accurate result when number of instances are increase the result accuracy also increases.



K-fold defines the accuracy and not improving the accuracy. Much of the k-overlay cross-certification check offers you an idea of how correctly they measure your performance: such as a Mean and Std. Error of AUC for a classifier.

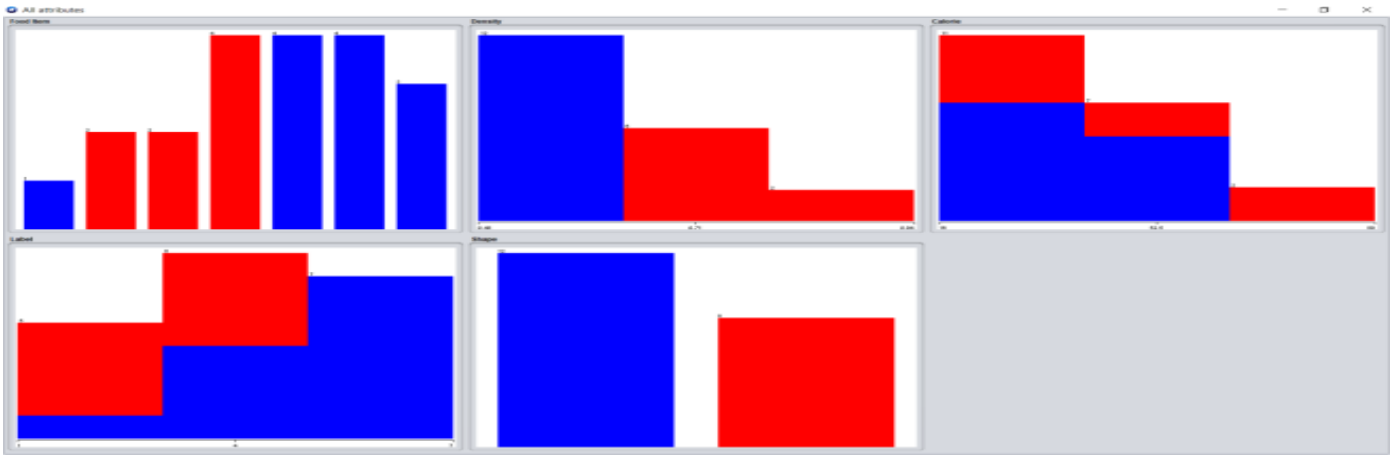


Fig -4: Visualization of the data set using weka 3.8

This picture contains five different categories of graph like food item, Density, calories, Label, Shape.

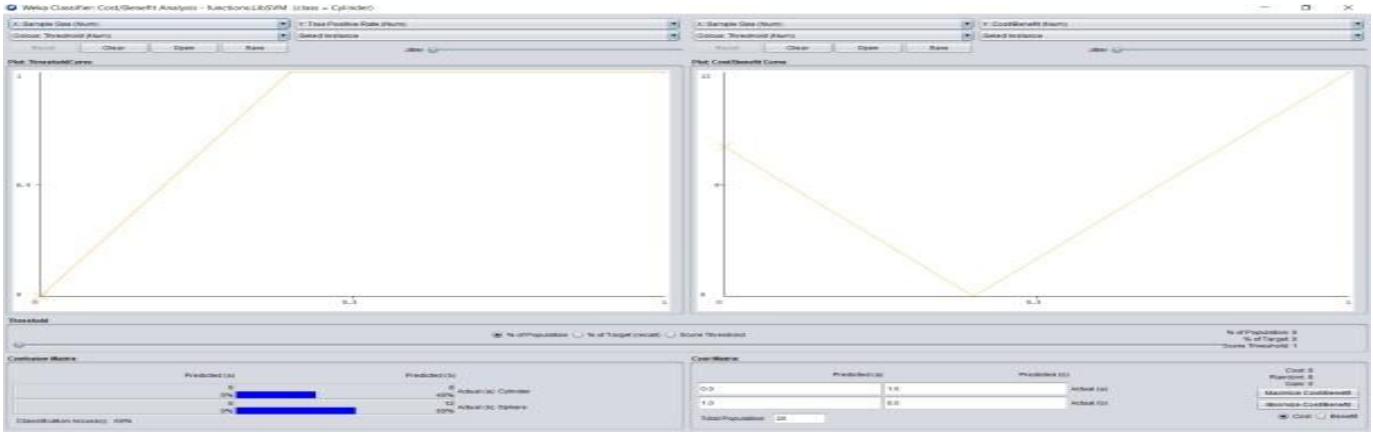


Fig: 5 Cylinder Thresholds vs. Sphere Curve

This figure shows the pictorial representation of Cylinder Threshold and Sphere Curve how both are varies when number of instances increases. Cylinder Threshold there X-component is number of instances and Y-component is True Positive number. Similarly on the case of Sphere Curve X-component is number of instances and Y-axis is Cost benefit.

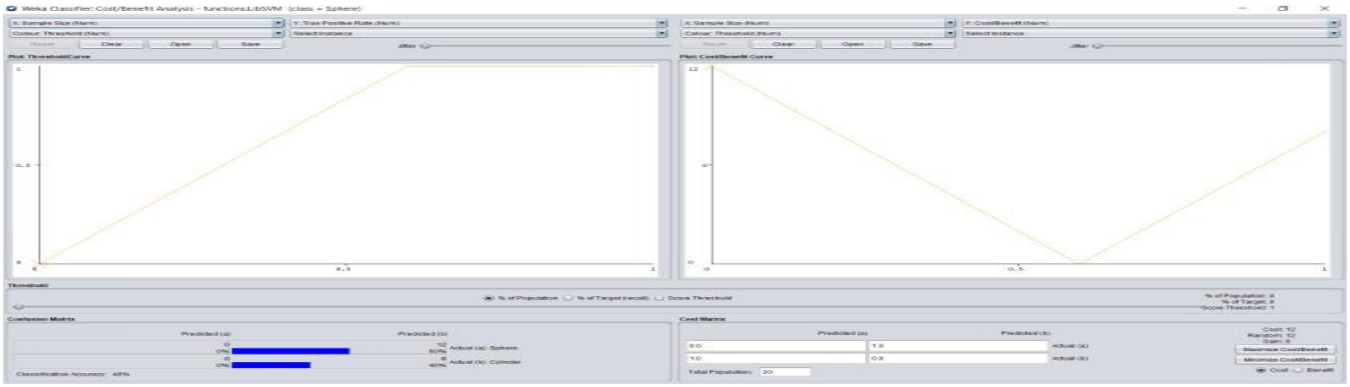


Fig: 6 Sphere Threshold vs. Benefit Curve

This figure Show the Sphere Threshold and Benefit Curve .As we Show before that number or instances when decrease accuracy decrease but when number of instances increase accuracy increases where is the result. So on the Sphere Threshold there X-component is number of instances and Y-component is True positive rate. Similarly Benefit curve X-component is number of instances and Y-component is Cost curve.

Conclusion:

The performance of Table 1 is the proposed method of various data set eatable item attribute where using SVM instead of SMO is the better choice for calculating 100 percent accuracy. Calculating the 100 percent accuracy is the main objective of SVM method.

ACKNOWLEDGEMENT

I would like to express to the people who have supported me successfully in full fulfillment of stage one, my sincere gratitude and profound appreciation. I want to begin with by thanking Mr. Ashis Kumar Mishra (CSE), my mentor, for the useful direction, support and continuous supervision to get this piece of work into our system.

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BIOGRAPHIES

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