

# ABALONE AGE PREDICTION USING IBM WATSON

## 1. INTRODUCTION

### 1.1 Overview

The economic value of abalone is positively correlated with its age. Therefore, to detect the age of abalone accurately is important for both farmers and customers to determine its price. Determining the actual age of an abalone is a bit like estimating the age of a tree. This project aims at building a web App that predict the age of abalones by taking the input values. We created a model from a data set that includes the input parameters are like sex, length, diameter, height, whole weight, shucked weight, viscera weight, shell weight, rings to predict accurate age. Then user creates an IBM Watson studio service, IBM Cloud object storage service on IBM Cloud and deploy the model to IBM Cloud.

### 1.2 Purpose

Determining their age is detailed process. Using IBM cloud, the aim of the study is to determine the accurate age which will be perfect for the given use case. Where there are nine setting parameters and one output parameter. Based on these input parameters we have to predict the accurate age for model. Machine Learning algorithms are used to recognize patterns and make decisions based on empirical data. After training the model must be deployed in the cloud using IBM Watson Machine Learning tool. And created simple, user friendly and responsive user interface for getting input from the user and predicting the result from IBM deployed model.

## 2. LITERATURE SURVEY

### 2.1 Existing problem

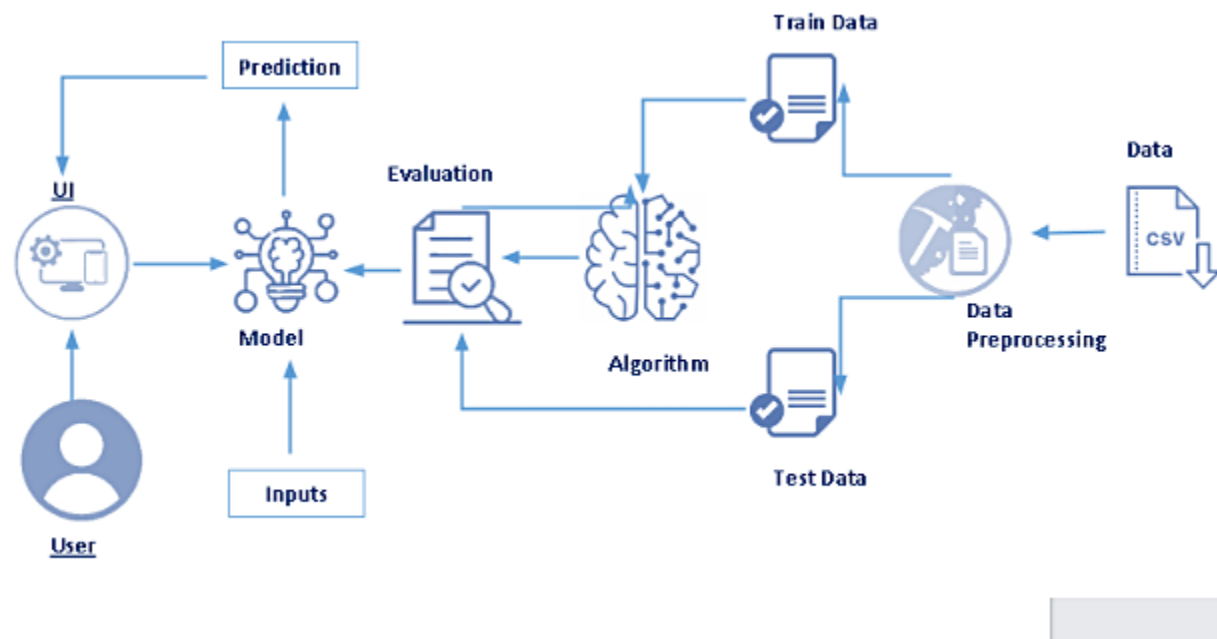
Abalone is a common name for sea snails. Determining their age is a detailed process. Their shell is cut through cone, stained and the rings are counted using a microscope. This is a time-consuming process.

### 2.2 Proposed problem

Abalone age prediction can be simplified by using neural networks. To predict their age using the physical measurement of the abalone. Here, we use measurement such as length, height, weight, and other features to predict their age.

### 3. THEORITICAL ANALYSIS

#### 3.1 Block diagram



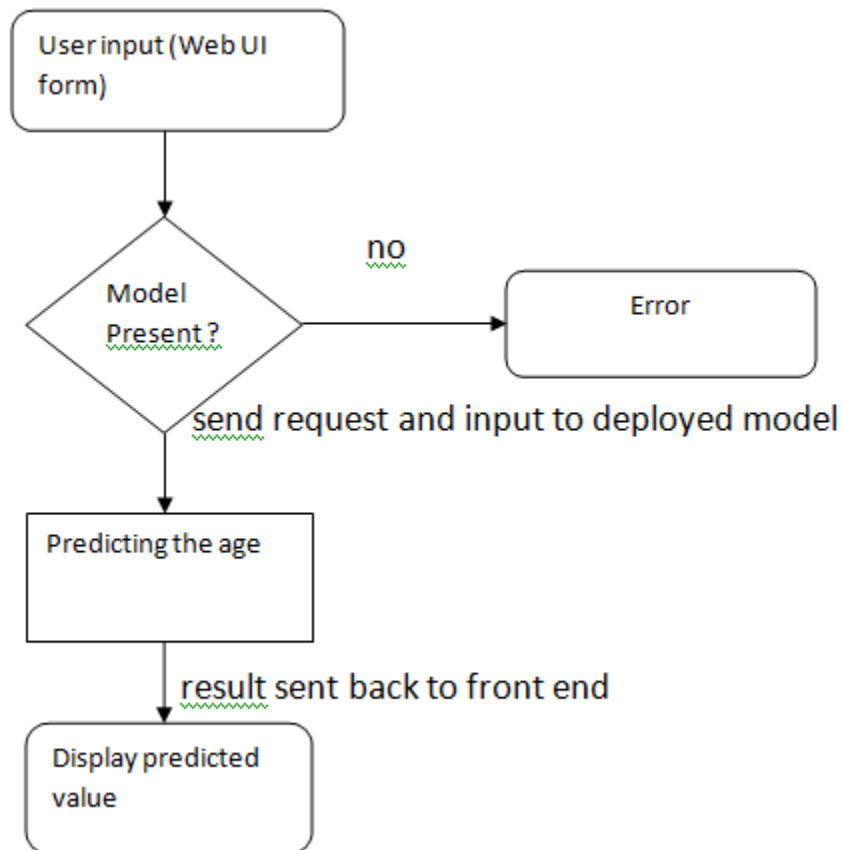
#### 3.2 Hardware / Software Designing

- IBM Watson Studio - IBM Watson Studio helps data scientists and analysts prepare data and build models at scale across any cloud.
- IBM Watson Machine Learning - IBM Watson Machine Learning helps data scientists and developers accelerate AI and machine-learning deployment.
- IBM Cloud Object Storage - IBM Cloud Object Storage makes it possible to store practically limitless amounts of data, simply and cost effectively.

### 4. EXPERIMENTAL INVESTIGATIONS

We have used Decision Tree for this model ,which comes under classification, regression algorithms .After making predictions using logistic regression, random forest ,decision tree algorithms ,we have chosen decision tree as it gives the highest accuracy score. 1. The general motive of using Decision Tree is to create a training model which can use to predict class or value of target variables by learning decision rules inferred from prior data(training data).The understanding level of Decision Trees algorithm is so easy compared with other classification algorithms. The decision tree algorithm tries to solve the problem, by using tree representation.

## 5. FLOW CHART



## 6. RESULT

The given values are input to form are abalone sex=0, length=0.455, diameter=0.365, height=0.095, whole weight=0.5140, shucked weight=0.2245, viscera weight=0.1010, shell weight=0.150. The result of prediction is 16.5 years.

## Enter values to predict the age of Abalone:

Sex of Abalone: Enter 2 for Male, 0 for Female, 1 for Infant

0

Length:

0.455

Diameter:

0.365

Height:

0.095

Whole-weight:

0.5140

Shucked-weight:

0.2245

Viscera-weight:

0.1010

Shell-weight:

0.1500

Predict

Shucked-weight:

0.2245

Viscera-weight:

0.1010

Shell-weight:

0.1500

Predict

The predicted age of abalone is 16.5 years.

## 7. ADVANTAGES & DISADVANTAGES

## 7.1 Advantages

The model is fast and accurate and it gives the accurate values of abalone. Its very time consuming because we use Classification algorithms are Regression algorithms in this project. We get the output easily when we analyze so user can't wait much time for the output. It is very useful for a new customer who hasn't any idea about how to predict the age.

## 7.2 Disadvantages

A lack of inaccurate parameters will affect the age prediction of abalone. So it's a big disadvantage. We use Classification algorithms are Regression algorithms to implement this system so its need a large amount of data to predict the age of abalones. The prediction is depend only on the input values of a customer so it may vary depend on the persons.

## 8. APPLICATIONS

- Predict the accurate age of abalone based on many variables.
- Predict the abalone shell usage in jewelry & gifts.
- Predict the abalone usage in dishes.
- Predict the abalone shell usage in meditation.

## 9. CONCLUSION

On the source of this study it appears the future regression systems effort well to forecast the age of abalone. The study directs that we do not prerequisite to count the quantity of rings consuming microscopic test. In other disputes, we do not need any laboratory

experiment to predict the age of abalones. We can predict the age and price of abalone using the very simple physical individualities like weight, height, diameter, and length.

## 10. FUTURE SCOPE

The model can be easily implemented under various situations, we can add more attributes for better understanding the features relation and correlation can be done. The adding more data will make the model more accurate and finite .Abalone age predicting, has the potential to democratize the production of abalone, we can use these fish and shell in many fields such as making jewelry and gifts, meditation and dishes . Future Advancements in arts works and different types of dishes.

## 11. BIBILOGRAPHY

- 1)<https://machinelearningmastery.com/>
- 2)<http://www.kaggle.com/>
- 3)<https://www.geeksforgeeks.org/decision-tree/>
- 4)<https://www.joics.org/>

