Project Report

Avalanche forecasting Prediction

using Watson Auto AI Service

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Project Details

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Project ID : SPS_PRO_297

Project Title : Avalanche forecasting Prediction using Watson Auto AI Service

Duration : 4 Weeks

Project Support : SmartBridge Educational

Services

Project Mentor : Mr. RammohanBethiRSIP Career Basic ML 028

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Finish Date : June 30th, 2020

ACKNOWLEDGEMENT

This project has taken a considerable amount of time and resources. I would like to acknowledge the help of all of those who have made this project possible. In finical I would like to thank my supervisor Mr. RammohanBethi for his time, patience and guidance, and also for allowing the idea to be pursued primitively. I would also like to thank Mr. Vinay Kumar Nomula for his help. Further to these people I would like to thank the members of the Smartbridge career workshop for their technical help in setting up various codes and faults. Also, I would like to thank all of my co-interns who have worked on the Open Source projects without whose efforts this project

would not have been possible.

1. INTRODUCTION

Avalanche Forecasting Prediction Using Auto AI Service

2. *LITERATURE SURVEY*

a. Existing problem

The word Avalanche refers to snow and ice. It means a mass of snow, ice, rocks, slush fallingrapidly down a mountain. Snow avalanches are among the most destructive natural hazardsthreatening human life, ecosystems, built structures, and landscapes in mountainous regions Each year avalanche kills more than 150 people worldwide. The most common cause of deathby avalanche is asphyxiation. If the person buried under an avalanche more than 15 minutesthen there is no chance of survive. So, the life of the people in that region is difficult to live.

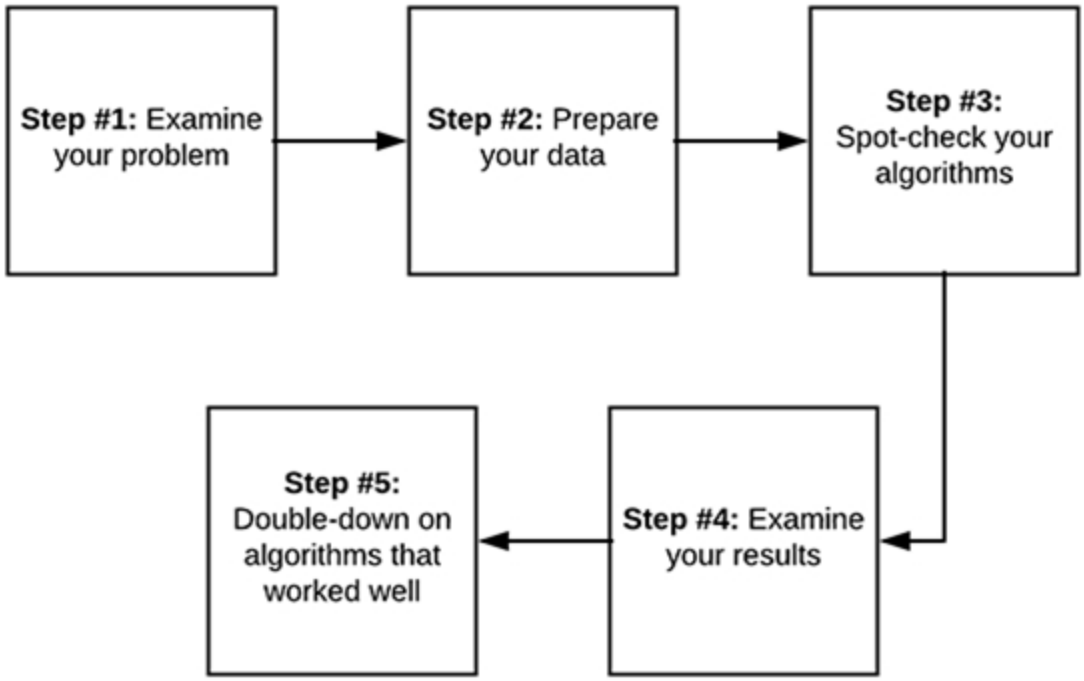
***Solution*:**

Avalanch Forecasting Prediction using Auto AI Service

This project prevents the people from the avalanche by priory informing them there is a chance to the occurrence of avalanche or not. The model gets the data from the IOT based sensors. After that we want to process those data using a suitable algorithm, then our model display whether the avalanche occur or not and how strength it was. To analyse the data coming from different sensors we are applying various machine learning algorithms. If there is a chance of avalanche then the notification will be sent to people so that they can take decisions accordingly and the model is been built in Auto AI.

3. THEORETICAL ANALYSIS

a. Block diagram



b. Hardware / Software designing

The project has been done by using IBM Cloud in which machine learning service, Watson studio and cloud storage service (to store the data) have been created by using the options available in Catlog.

3. EXPERIMENTAL INVESTIGATION

There are six steps in experimental investigation on of a general project:

1. Choose a Project Idea

2. Conduct Background Research

3. Compose a Hypothesis

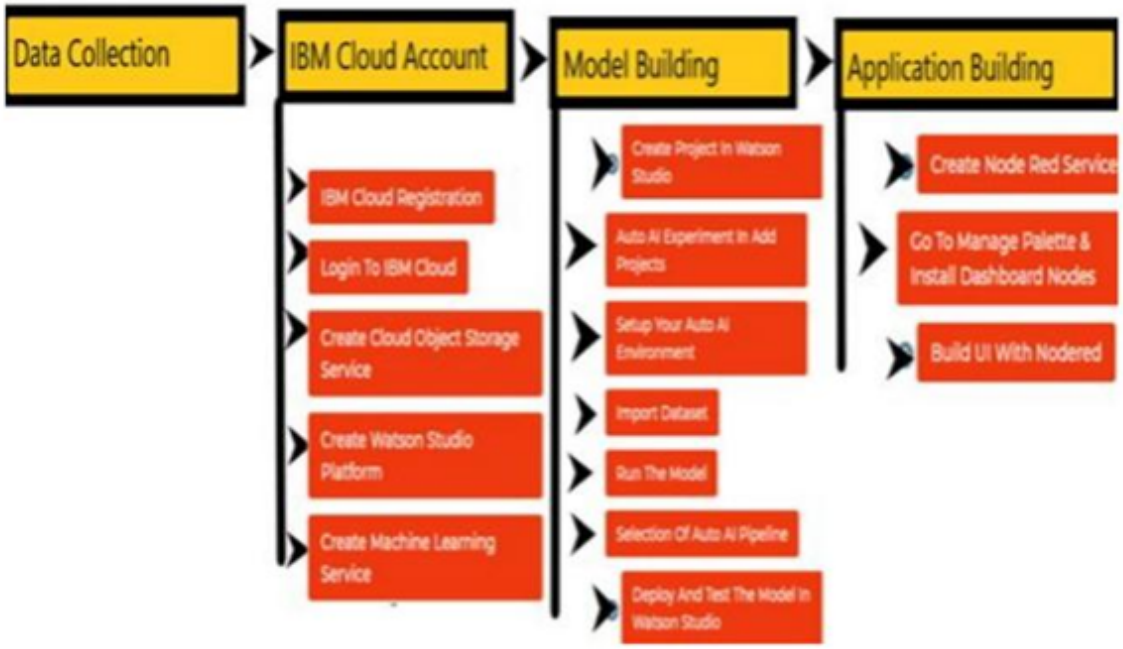
4. Design your Experiment

5. Collect Data

6. Analyse Data and Draw Conclusions

All the data has been collected considering the above factors and it has been formatted. After formatting it has been uploaded in the project and after that using Watson Studio Auto AI Experiment, it is uploaded to cloud object storage service and implemented. Based on these implementation, the value can be predicted using the data we have collected. After that application is developed using Node red Service.

4. ***FLOW CHAR T***



7. ADVANTAGES & DISADVANTAGES

The advantages are easy to implement, accessibility is fast, continuous Improvement, wide application, available 24x7, no human intervention needed. We can handle multi-dimensional and multi-variety data.

Where as the disadvantages are lack of security, loss of control on

data, high error susceptibility, dependence of network/providers.

8. APPLICATION

Using The Auto AI Experiment, one can build and deploy a machine learning model with sophisticated training features. In the given project we can predict the price of the required vehicle by giving few input parameters.

9. CONCLUSION

In this project by using IBM Cloud the model processing is been done in Auto AI services in IBM cloud and then the deployment is been done in Watson studio and application is build using Node red service which has been successful as we are able to get the desired output.

10. FUTURE SCOPE

As we are developing day to day there is a continuous growth of Auto AI and Machine Learning. The web application can be used to predict the cost of the health insurance accurately, precisely and efficiently instead of n number of people being involved directly or

indirectly.

Bibliography

The whole project uses different services which are listed below

- IBM Cloud

-Watson Studio Auto AI

- Node Red Application

-Cloud Storage Service