PROJECT REPORT - PREDICTING LIFE EXPECTANCY USING MACHINE LEARNING.

1. INTRODUCTION :

1.1 Overview :

To predict the life expectancy using Machine Learning . A typical Regression Machine Learning project leverages historical data to predict insights into the future. This problem statement is aimed at predicting Life Expectancy rate of a country given various features.

1.2 Purpose :

This problem statement provides a way to predict average life expectancy of people living in a country when various factors such as year, GDP, education, alcohol intake of people in the country, expenditure on healthcare system and some specific disease related deaths that happened in the country are given.

2. LITERATURE SURVEY :

2.1 Existing Problem :

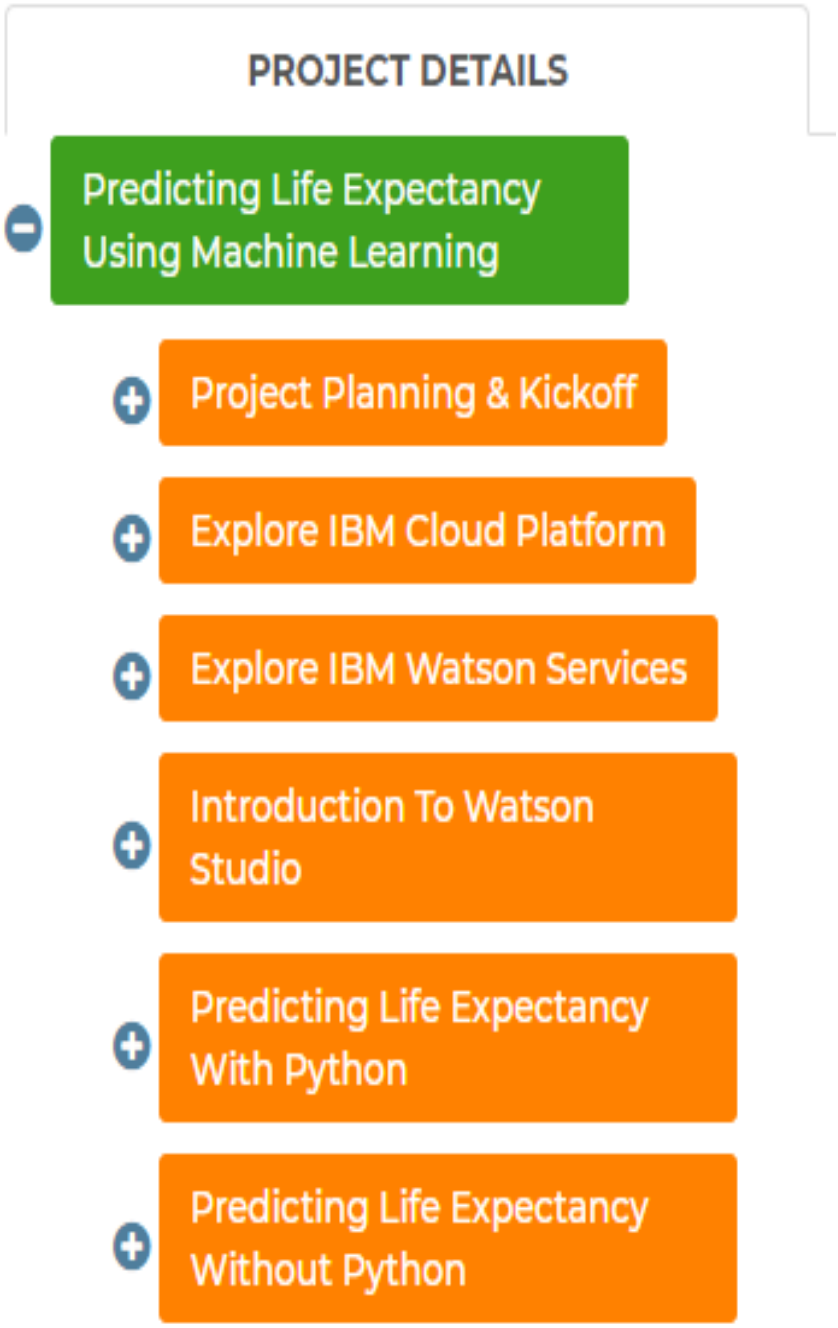
Average life expectancy of people living in a country when various factors such as year, GDP, education, alcohol intake of people in the country, expenditure on healthcare system and some specific disease related deaths that happened in the country causes some difficult to predict the life expectancy in a given country . So we are using the same to predict the life expectancy.

2.2 Proposed Solution :

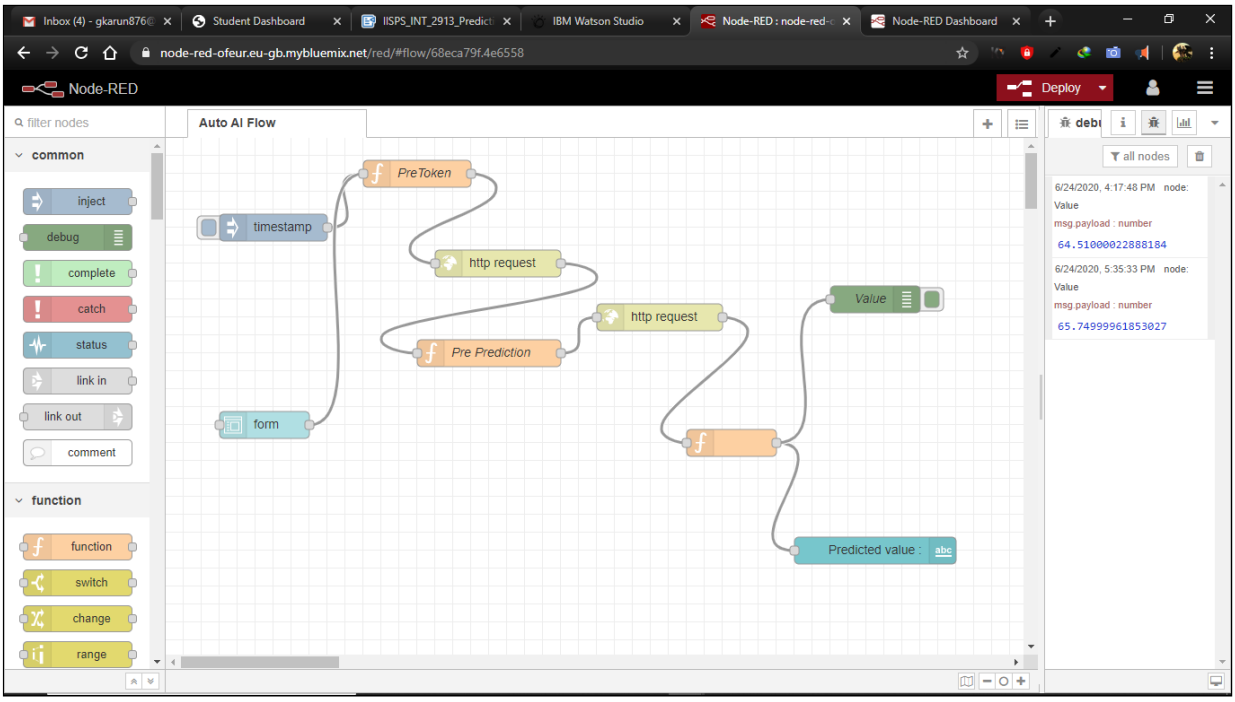
Using Python , IBM Cloud , IBM Watson , typical Regression Machine Learning project leverages historical data to predict insights into the future. This problem statement is aimed at predicting Life Expectancy rate of a country given various features.

3. THEORETICAL ANALYSIS :

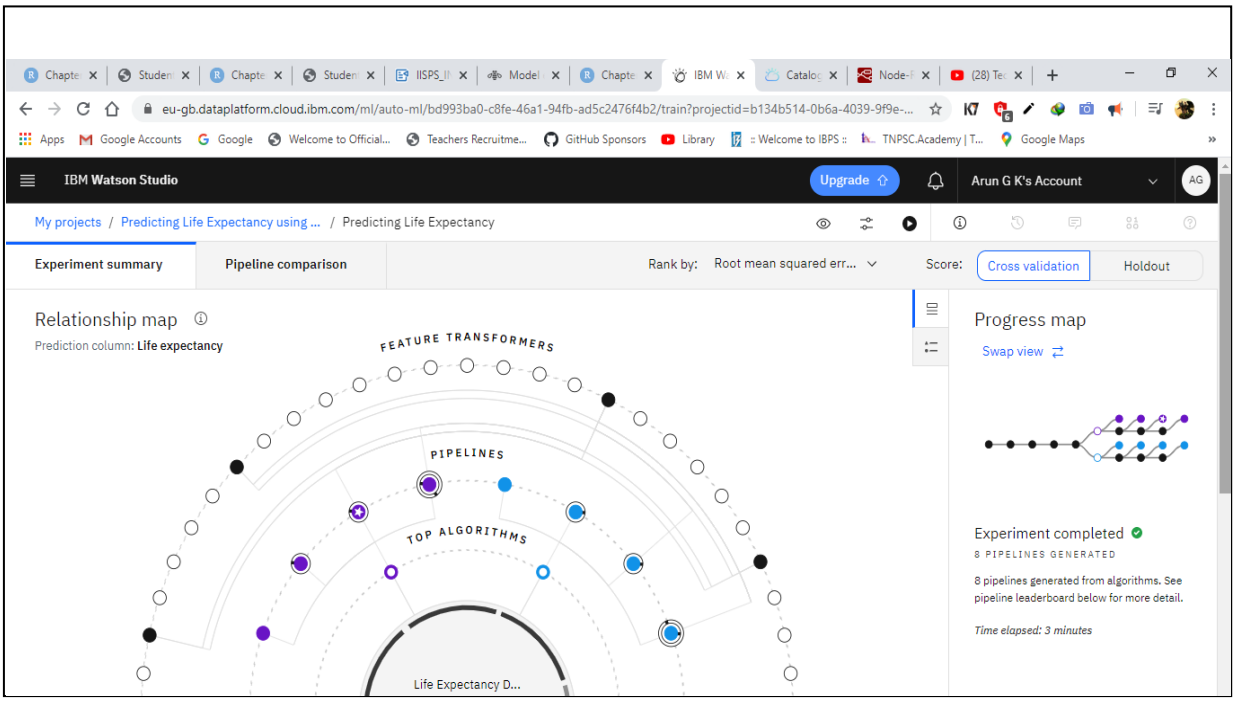
3.1 Block Diagram :

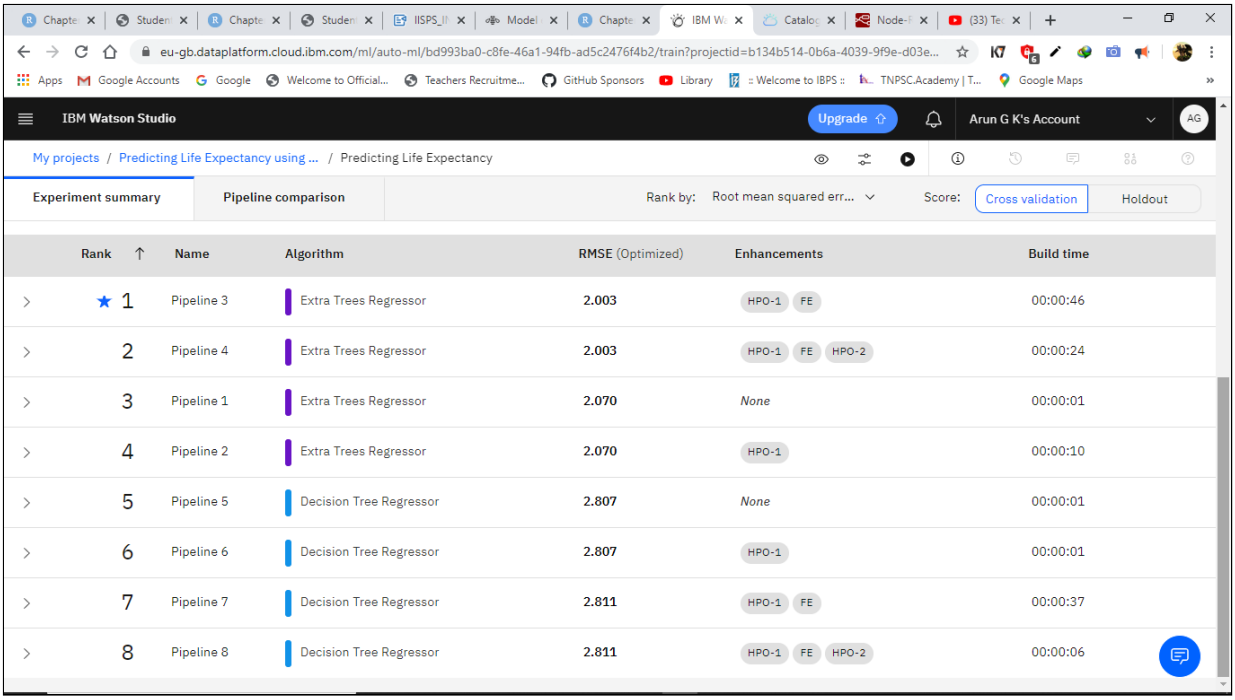


3.2 Hardware / Software designing :

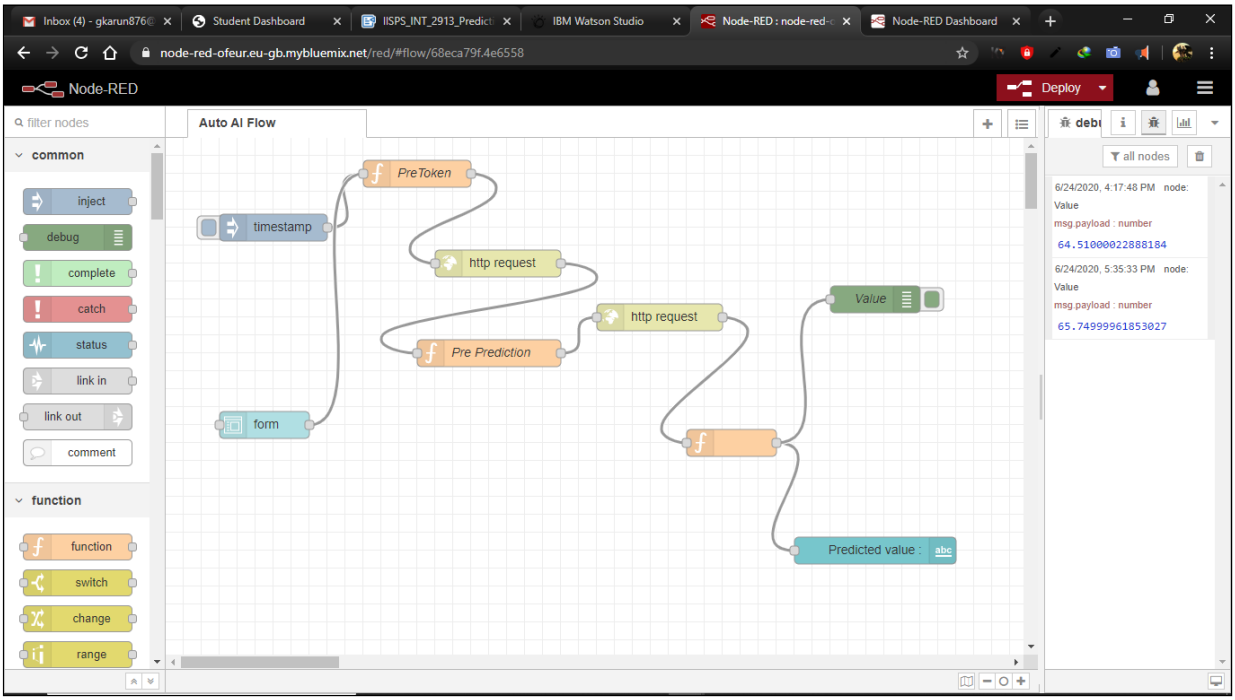


4.EXPERIMENTAL INVESTIGATIONS :

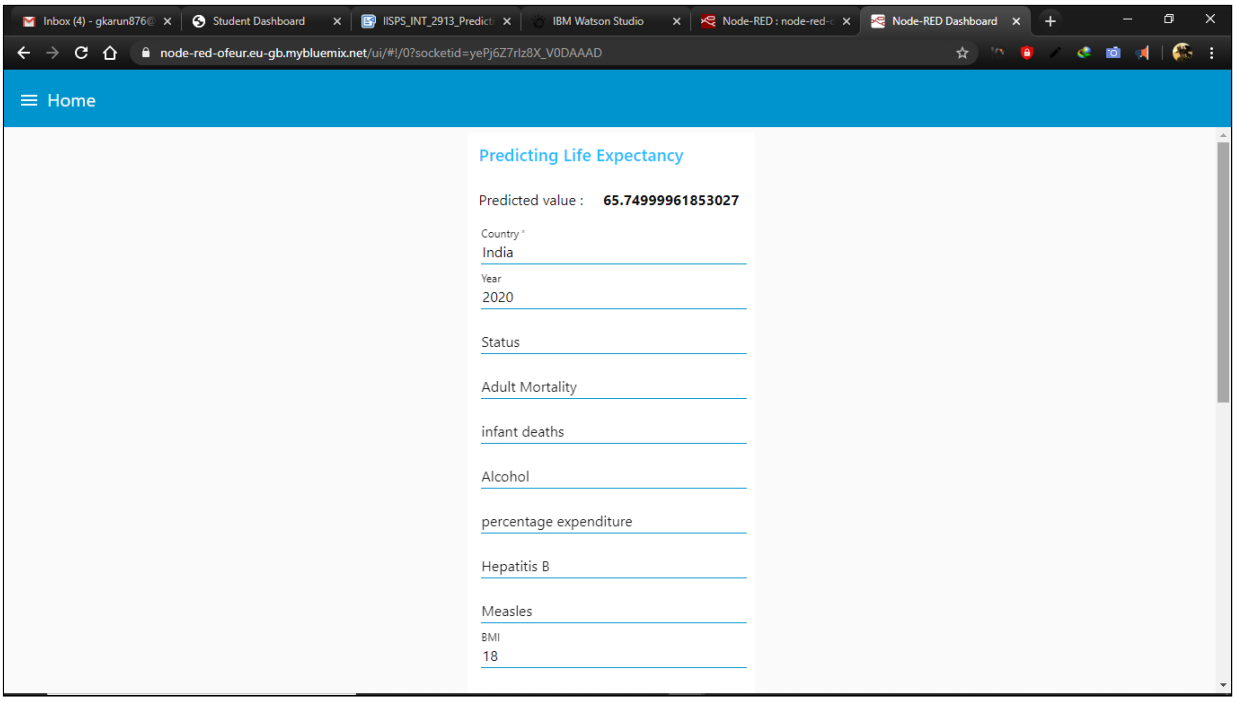



IBM Watson Studio
Upgrade
Arun G K's Account
My projects / Predicting Life Expectancy using ... / Predicting Life Expectancy
Experiment summary
Pipeline comparison
Rank by: Root mean squared err...
Score: Cross validation Holdout
Rank Name Algorithm RMSE (Optimized) Enhancements Build time
1 Pipeline 3 Extra Trees Regressor 2.003 HPO-1 FE 00:00:46
2 Pipeline 4 Extra Trees Regressor 2.003 HPO-1 FE HPO-2 00:00:24
3 Pipeline 1 Extra Trees Regressor 2.070 None 00:00:01
4 Pipeline 2 Extra Trees Regressor 2.070 HPO-1 00:00:10
5 Pipeline 5 Decision Tree Regressor 2.807 None 00:00:01
6 Pipeline 6 Decision Tree Regressor 2.807 HPO-1 00:00:01
7 Pipeline 7 Decision Tree Regressor 2.811 HPO-1 FE 00:00:37
8 Pipeline 8 Decision Tree Regressor 2.811 HPO-1 FE HPO-2 00:00:06

5. FLOW CHART :


Node-RED
Deploy
Auto AI Flow
common
inject
debug
complete
catch
status
link in
link out
comment
function
function
switch
change
range
PreToken
timestamp
http request
http request
Pre Prediction
form
Value
Predicted value :
64.51000022888184
65.74999961853027

6. RESULT :



7. ADVANTAGES AND DISADVANTAGES :

- This algorithm gives more accurate value.
- This model predicts the life expectancy very faster rate than other models.
- If the input parameters are wrong , the entire flow gets wrong.
- The prediction value can't be assured that it is 100% accurate.

8. APPLICATIONS:

- Used in predicting life expectancy wherever needed .
- Use this algorithm to merge with database flows to monitor.
- To know the parameters which has major impact .

9. CONCLUSION :

Thus this problem statement provides a way to predict average life expectancy of people living in a country when various factors such as year, GDP, education, alcohol intake of people in the country, expenditure on healthcare system and some specific disease related deaths that happened in the country.

10. FUTURE SCOPE :

- It will be used by data scientists and all other countries to predict the life expectancy based on the given input parameters.

11. BIBLIOGRAPHY :

- Python
- IBM Cloud
- IBM Watson
- ZOHO Writer.
- Input dataset - https://www.kaggle.com/kumarajarshi/life-expectancy-who

APPENDIX :

A.Source Code :

JSON Flow for Node-Red :

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IBM Auto AI : Used Auto AI to create the model.

Node-Red UI URL :

https://node-red-ofeur.eu-gb.mybluemix.net/ui/#!/0?socketid=yePj6Z7rlz8X_V0DAAAD

Thus , all the source codes have been attached .