Project Name : Predicting Life Expectancy using Machine Learning
Project Member : Arun G K
Project Mentor : Hemant Kumar Gahlot (Smartbridge)
Date : 12.06.2020

TSK-50581: Project Scope, Schedule, Team & Deliverables :

Project Summary :

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.

Life expectancy is a statistical measure of the average time a human being is expected to live, Life expectancy depends on various factors: Regional variations, Economic Circumstances, Sex Differences, Mental Illnesses, Physical Illnesses, Education, Year of their birth and other demographic factors. 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.

Project Requirements :

- ➤ Zoho Writer
- ➤ Github repository
- ➤ Slack channel

Technical Requirements :

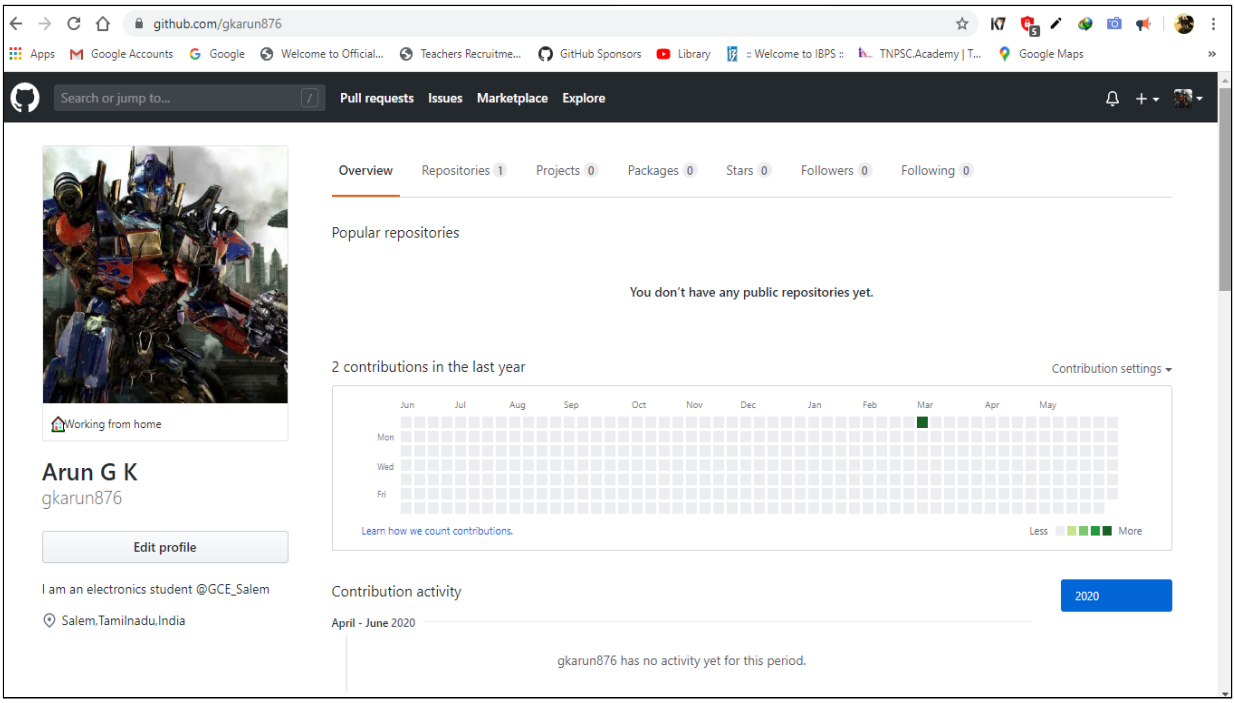
- ➤ Python
- ➤ IBM Cloud
- ➤ IBM Watson
- ➤ Node-Red
- ➤ Machine Learning

Project Team and Duration :

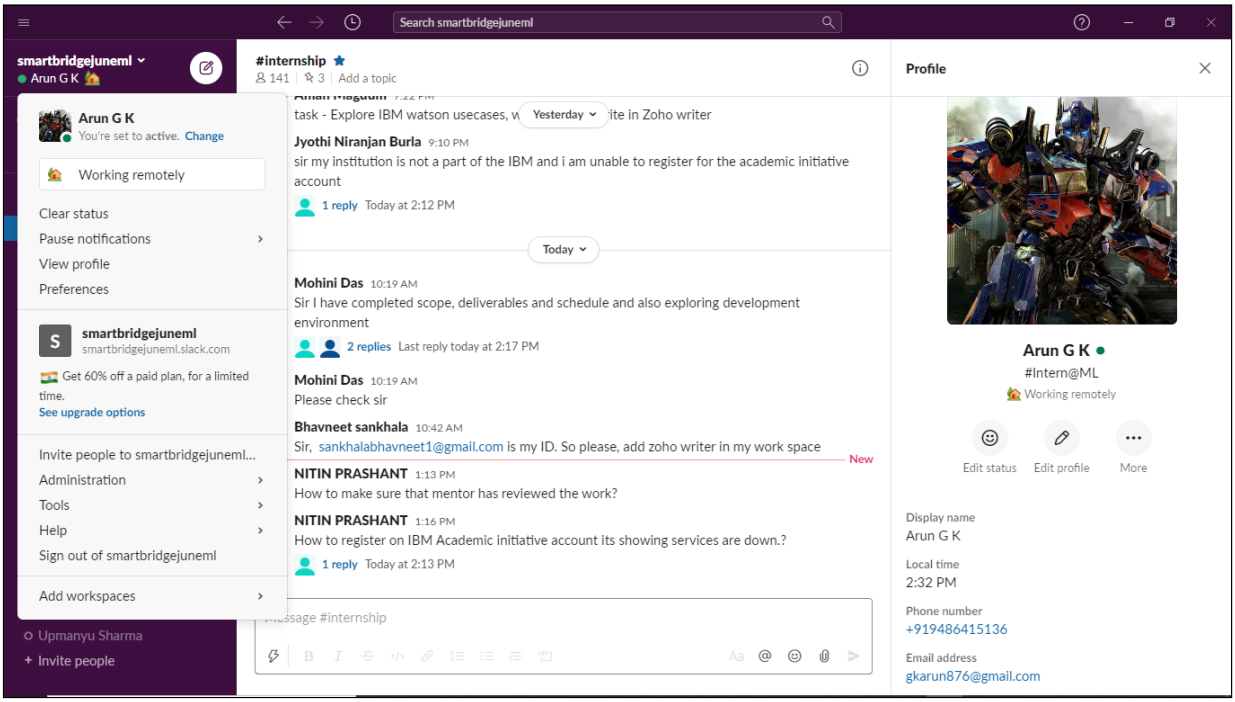
- ➤ Arun G K (30 days)

TSK-50582 - Setup The Development Environment :

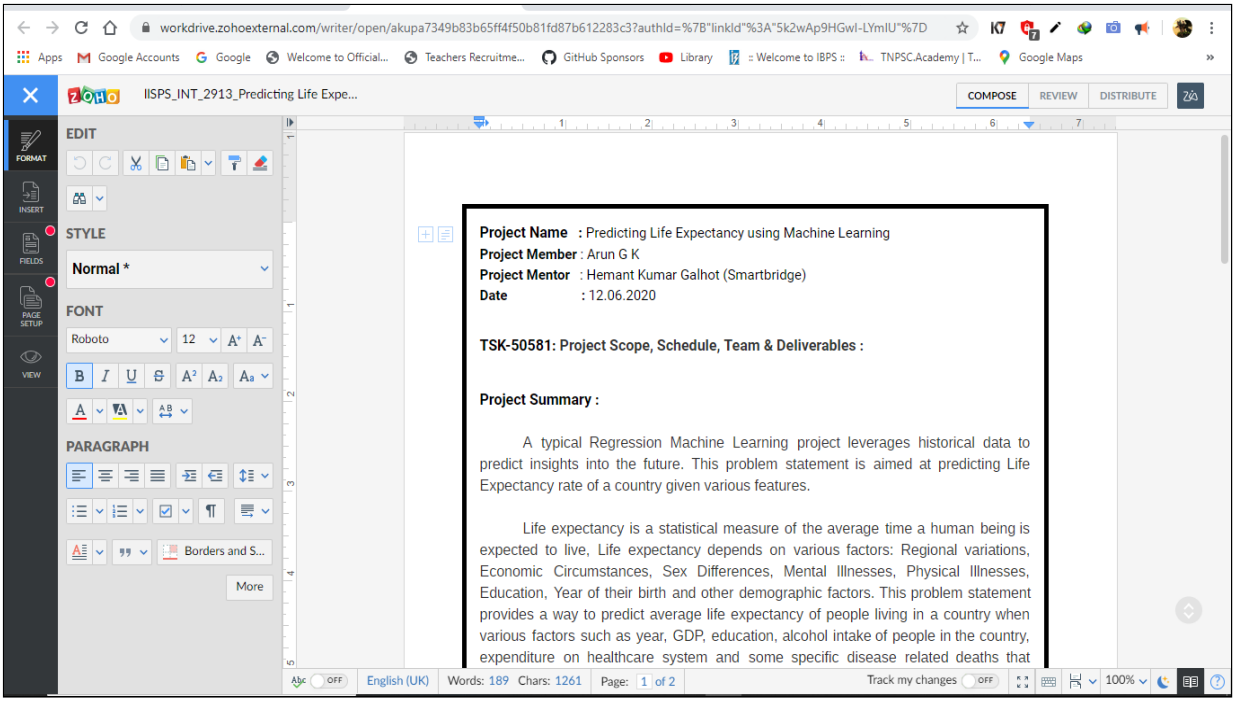
1) Github account URL : https://github.com/gkarun876



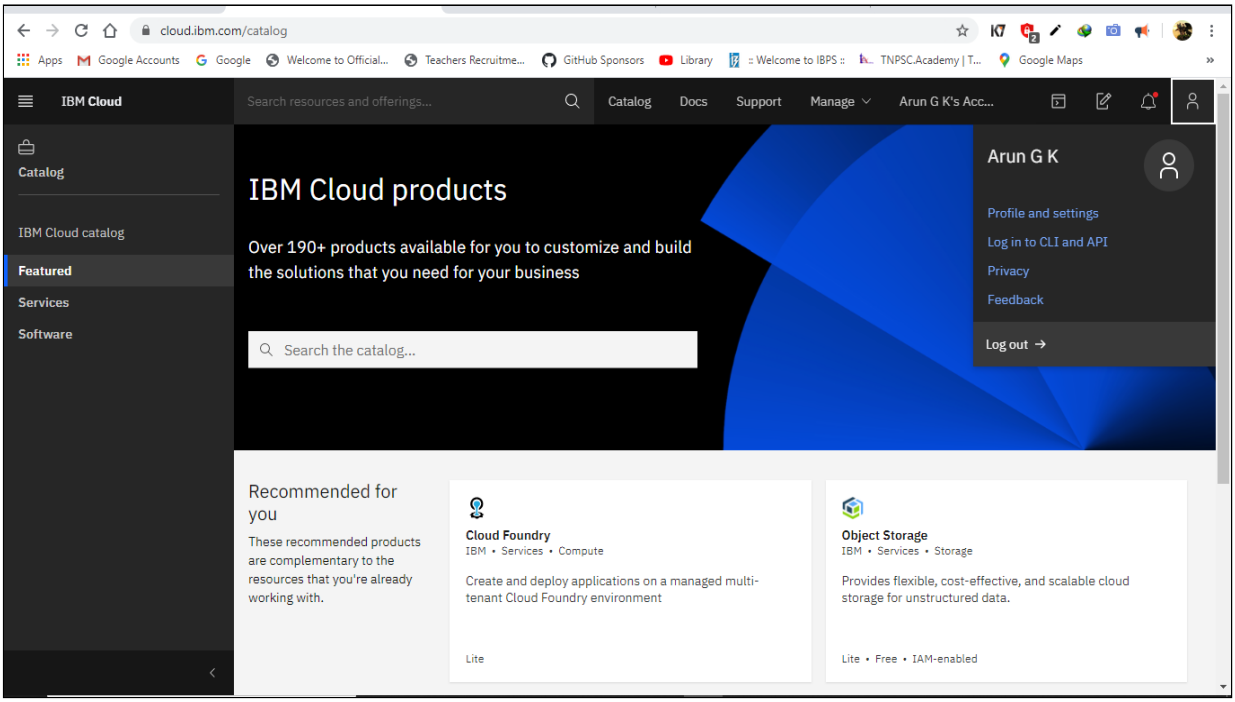
2) Slack channel :



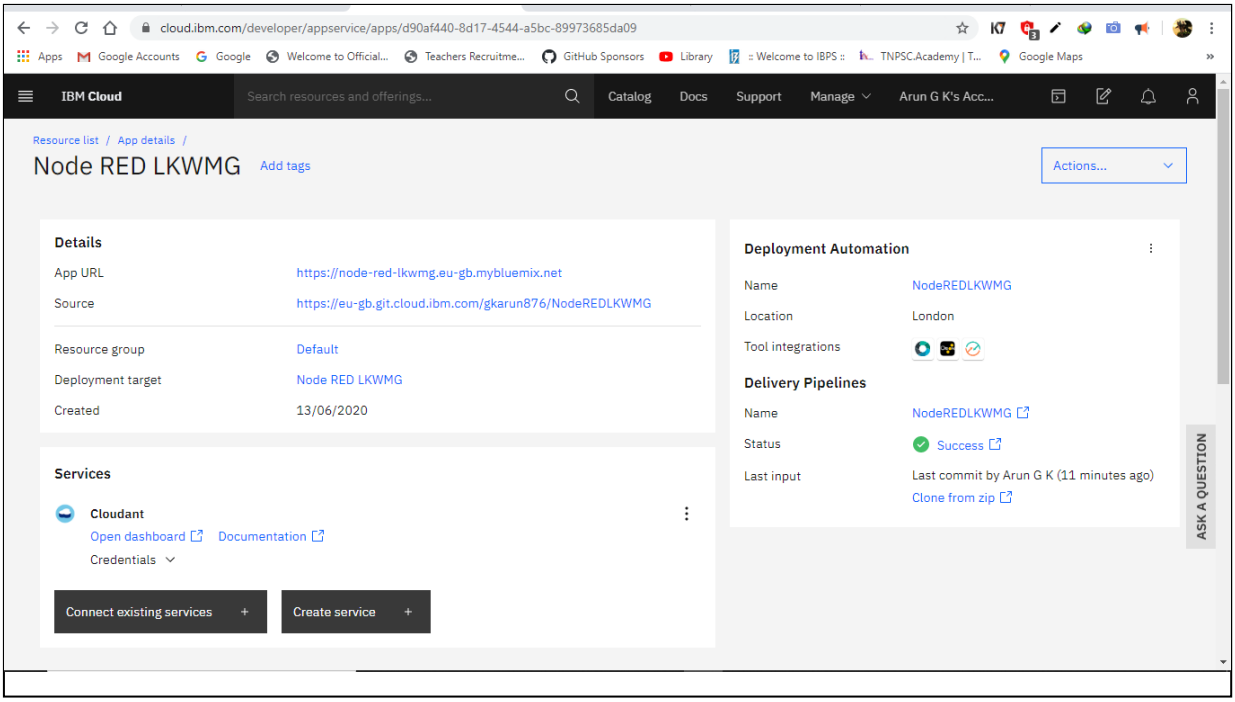
3) Work With Document Writer :

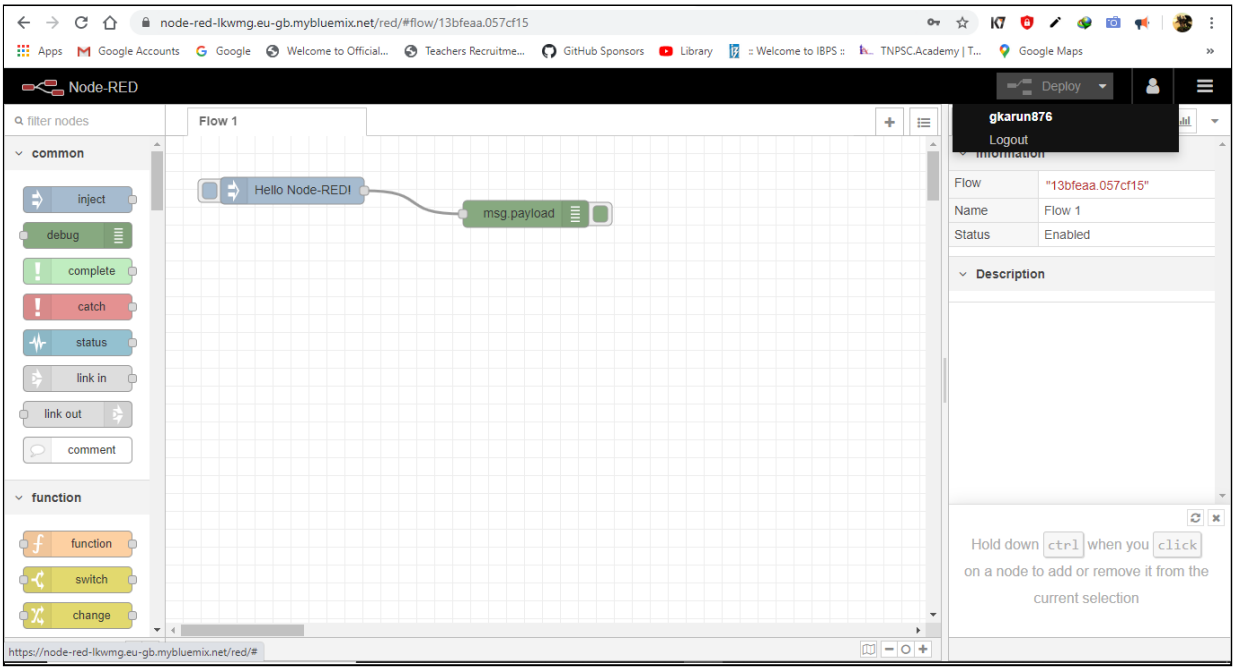


TSK-50583 - Create IBM Cloud Account :



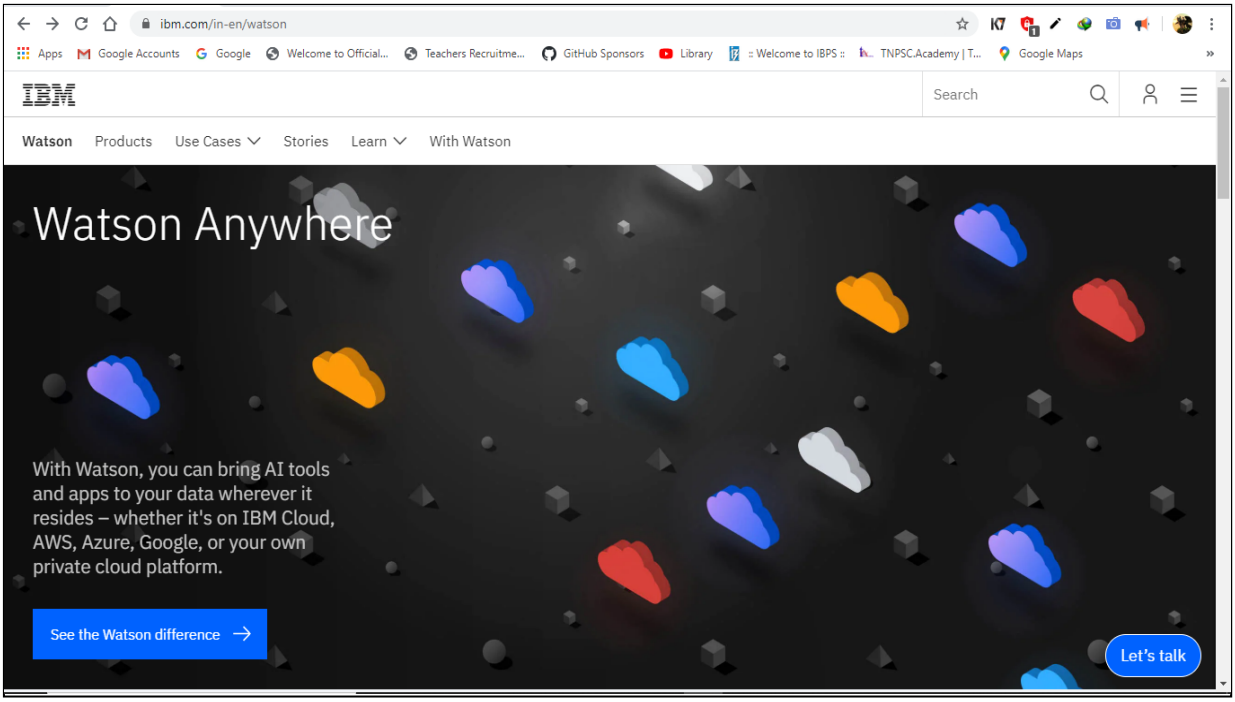
TSK-50584-Create a NODE-RED Starter Application :



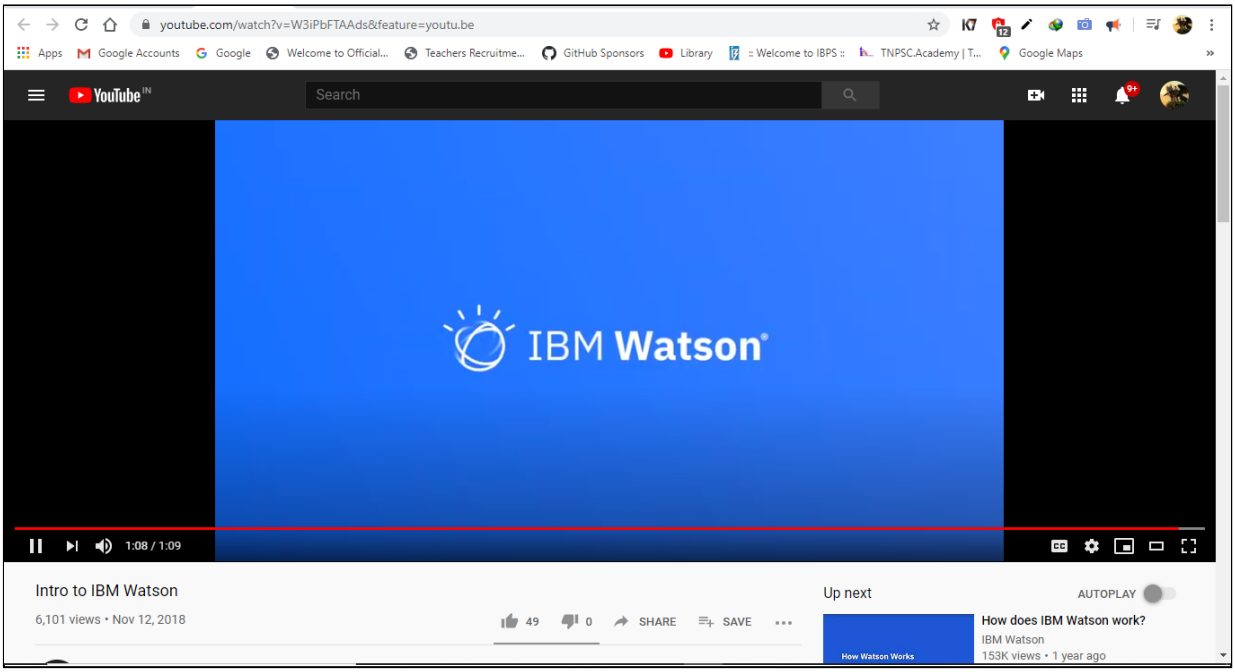


TSK-50585-Explore IBM Watson Usecases :

Watson products and services :

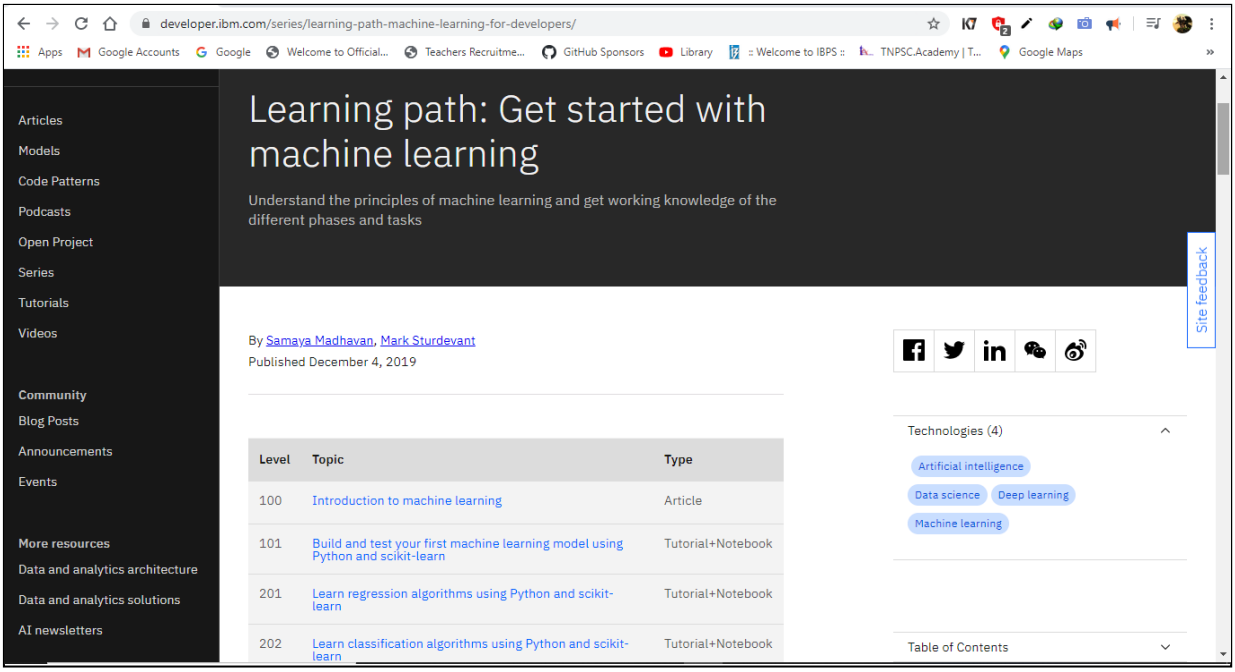


Watson at work :

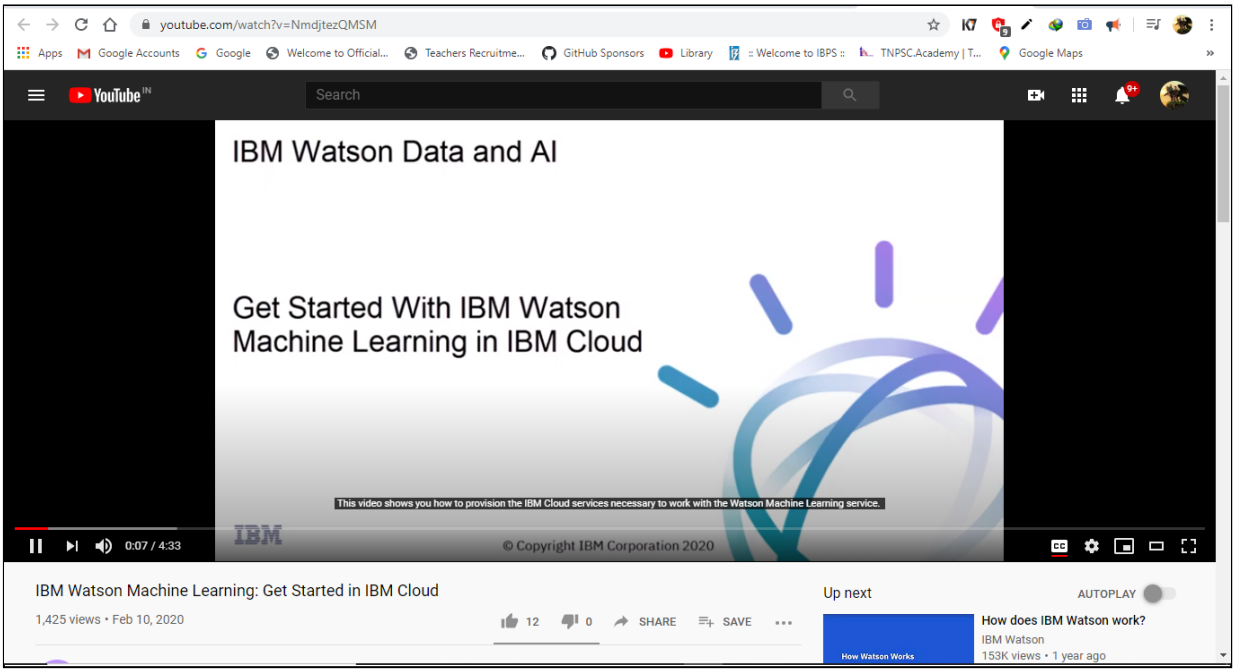


TSK-50586-Explore IBM Watson Machine Learning :

Introduction to Machine Learning :

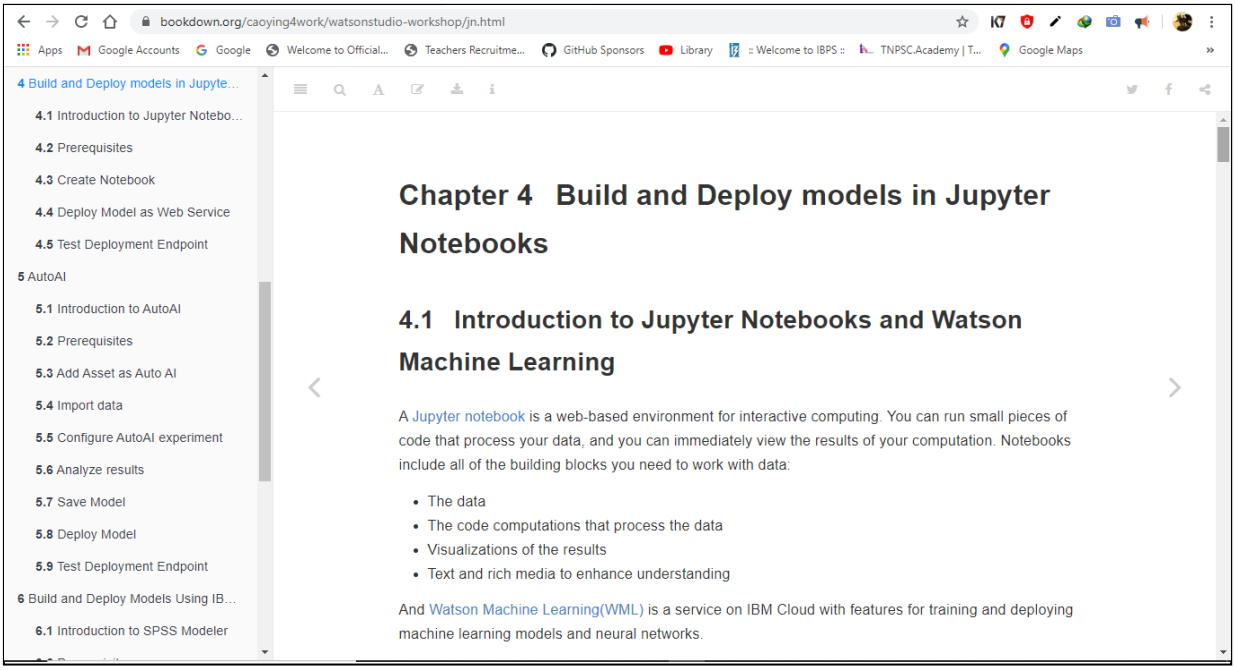


About IBM Watson Machine Learning :



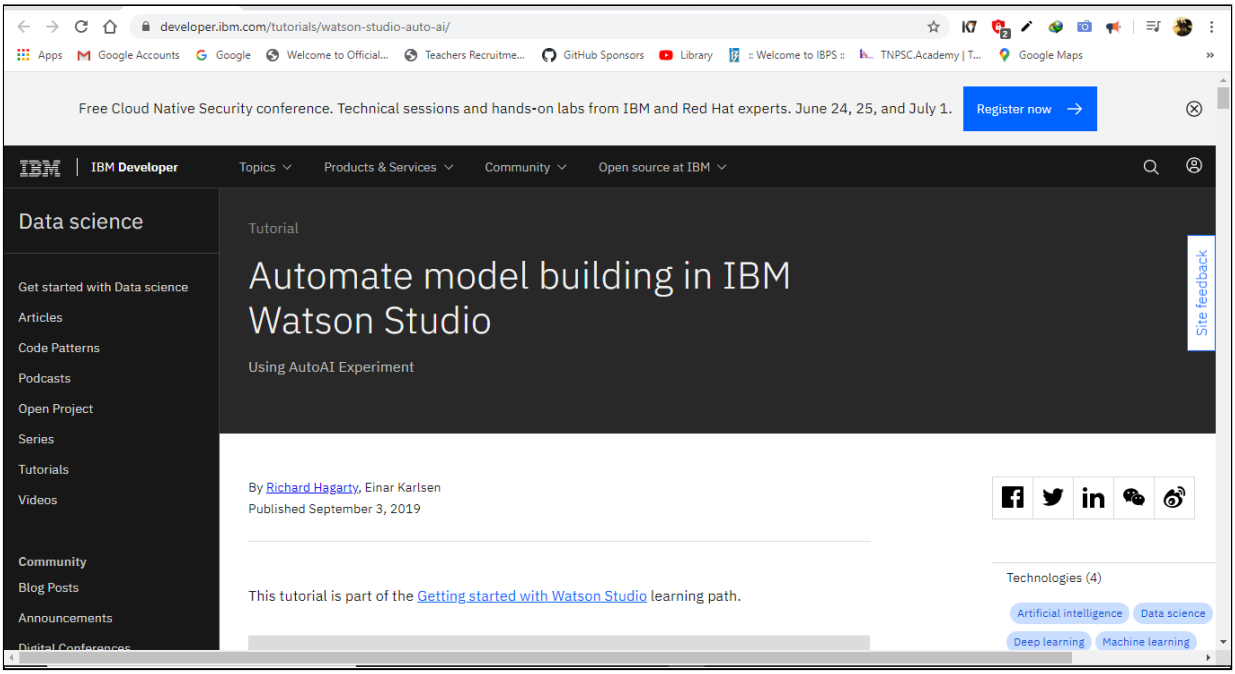
TSK-50587-Build your own ML Model in IBM Watson Studio :

Build Your Own ML Model IN IBM Watson Studio Using Machine Learning Service :

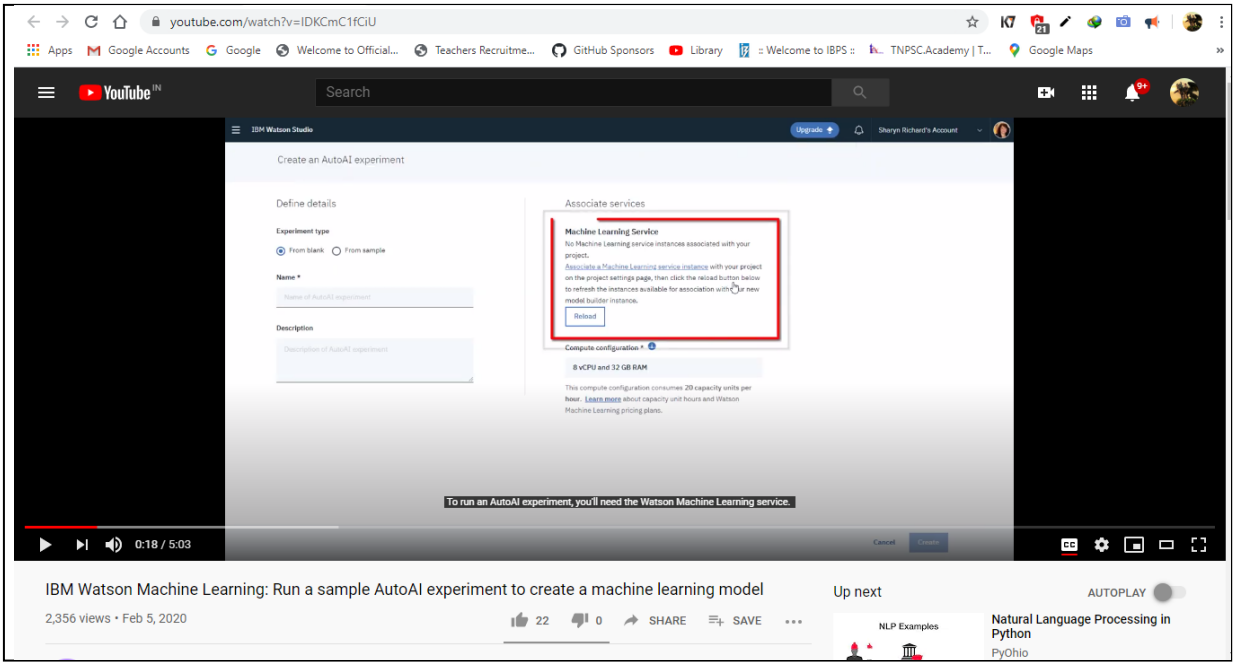


TSK-50588-Automate Your ML Model :

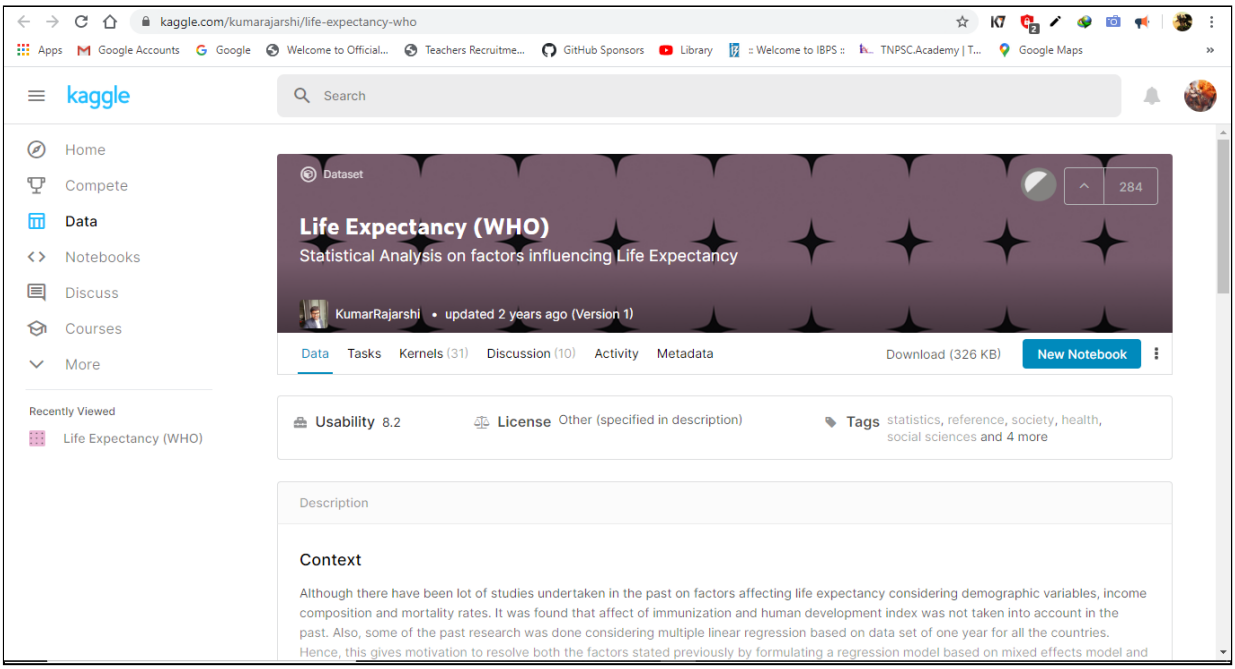
AutoAI Reference 1 :



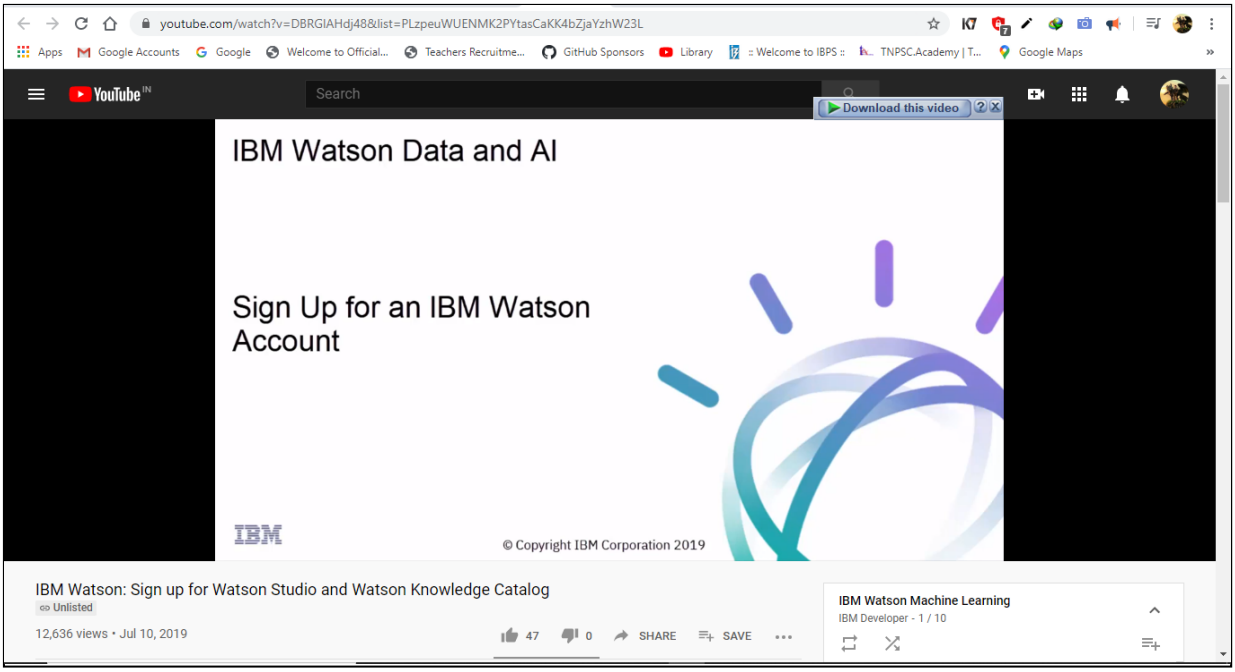
AutoAI Reference 2 :



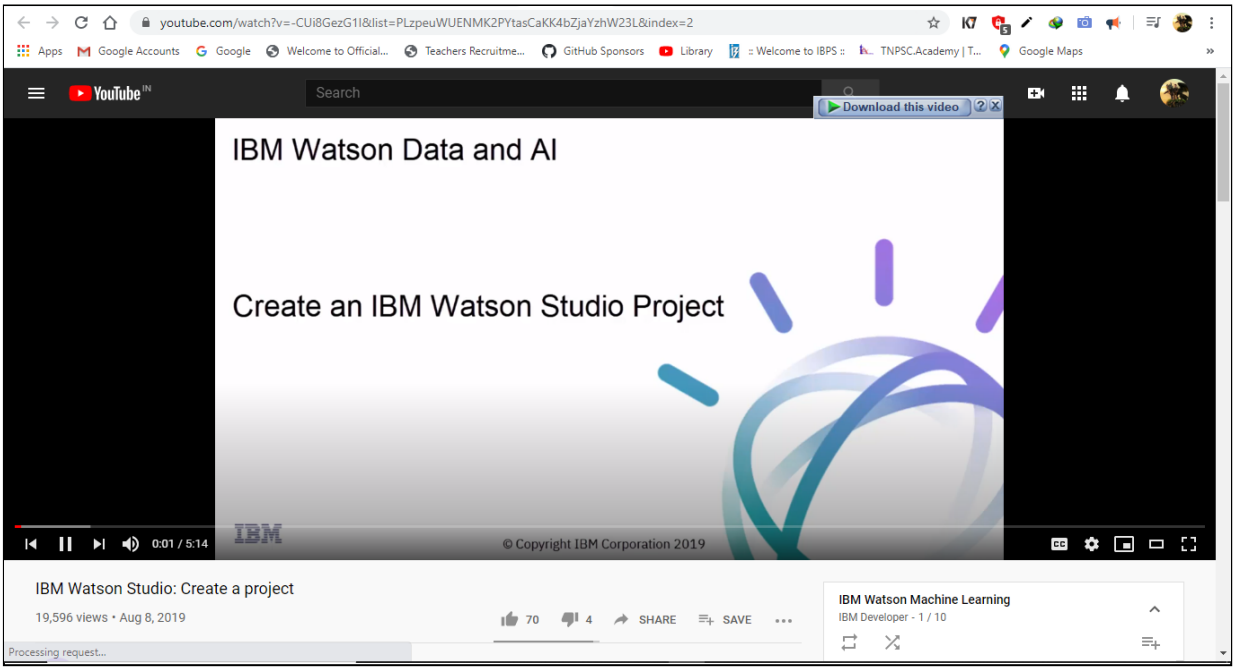
TSK-50589-Collect The Dataset For The Project :



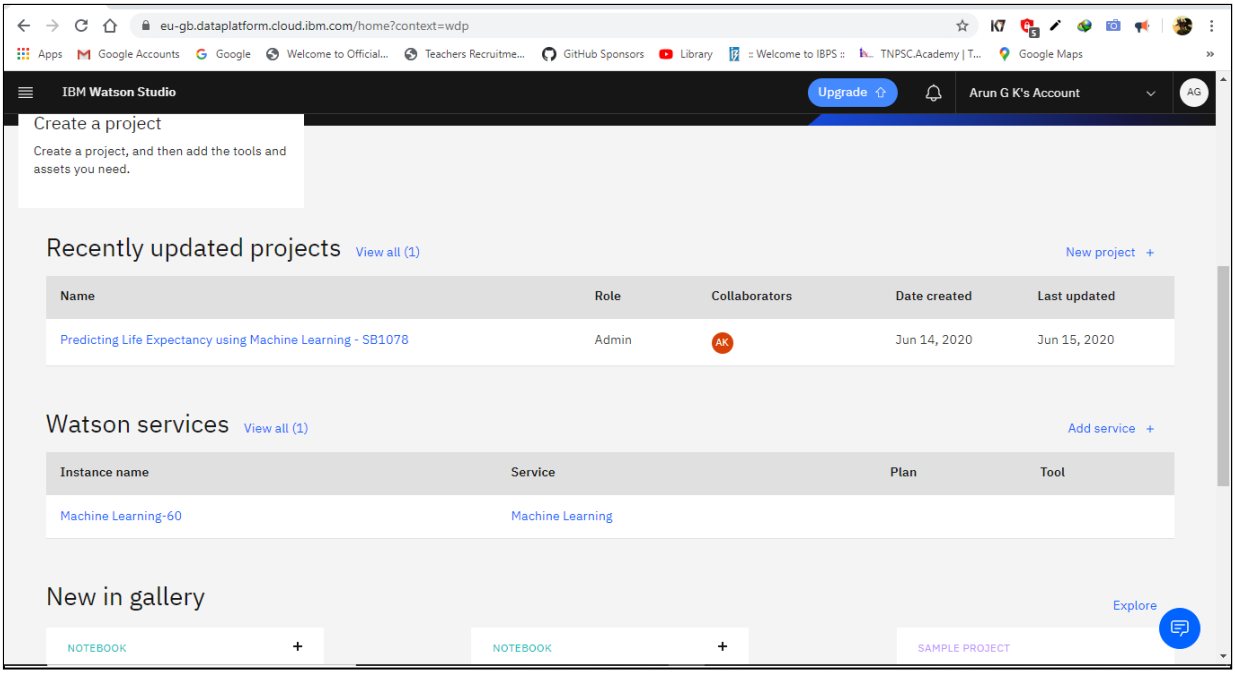
TSK-50590-Create Necessary IBM Cloud Services :



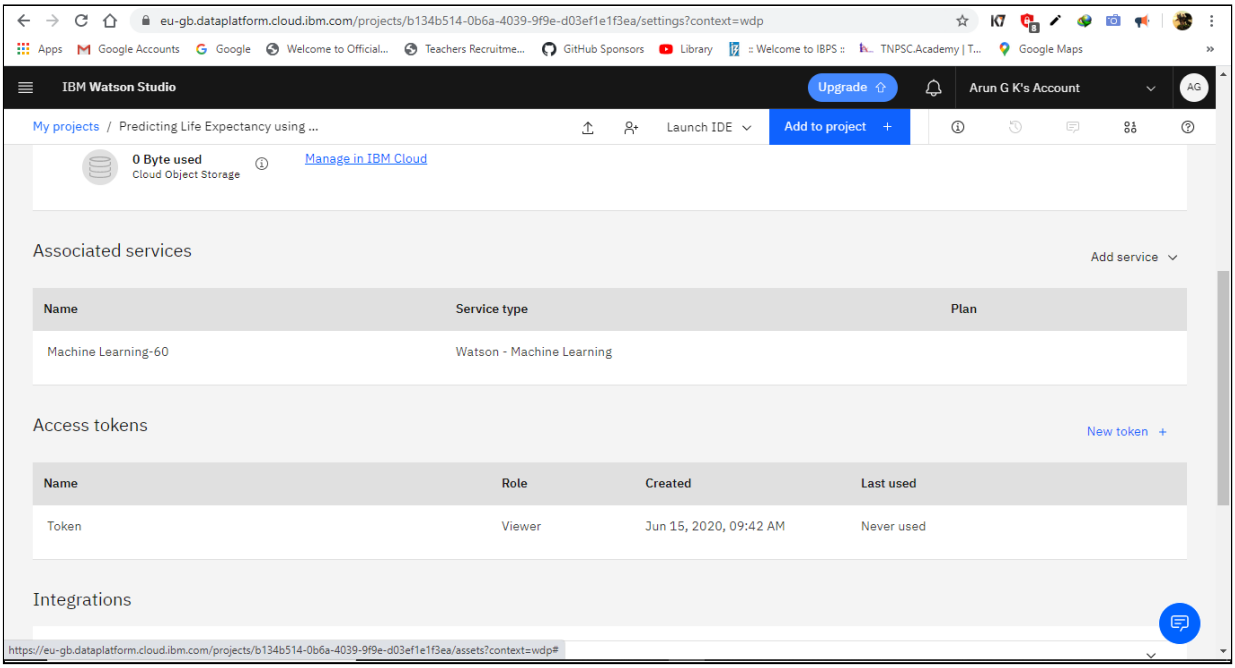
TSK-50591-Create a Watson Studio Project :



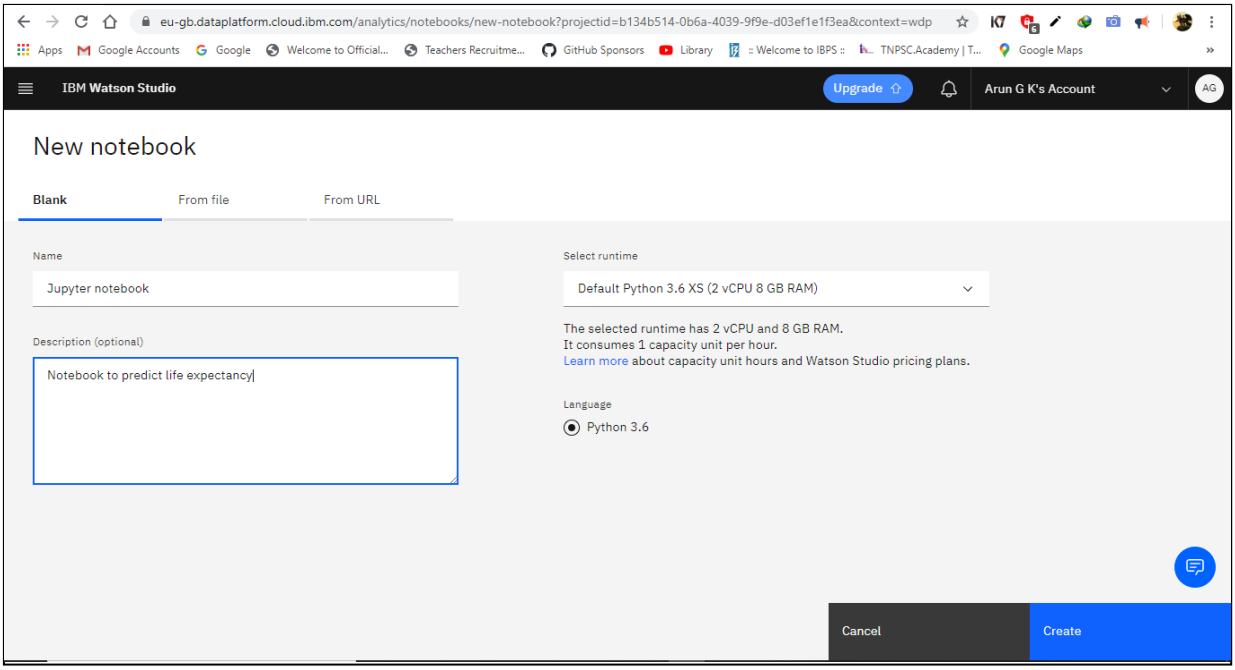
TSK-50592-Configure Watson Studio :

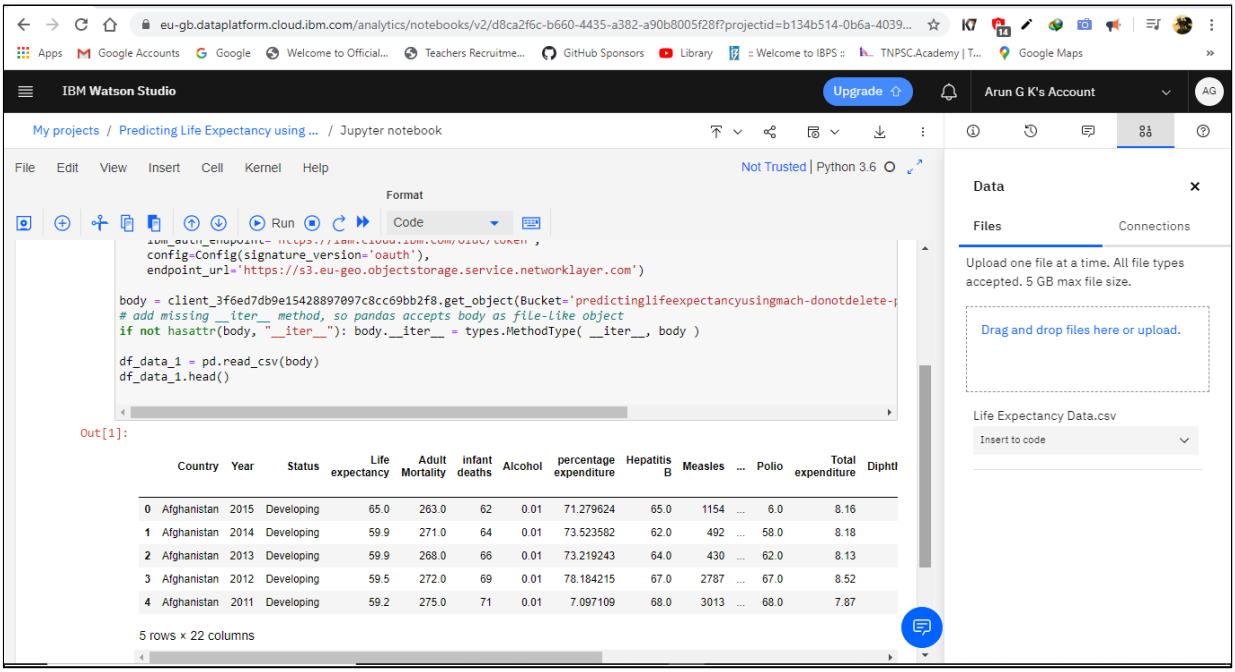


TSK-50593-Create Machine Learning Service :



TSK-50594-Create A Jupyter Notebook In IBM Watson And Import Data :





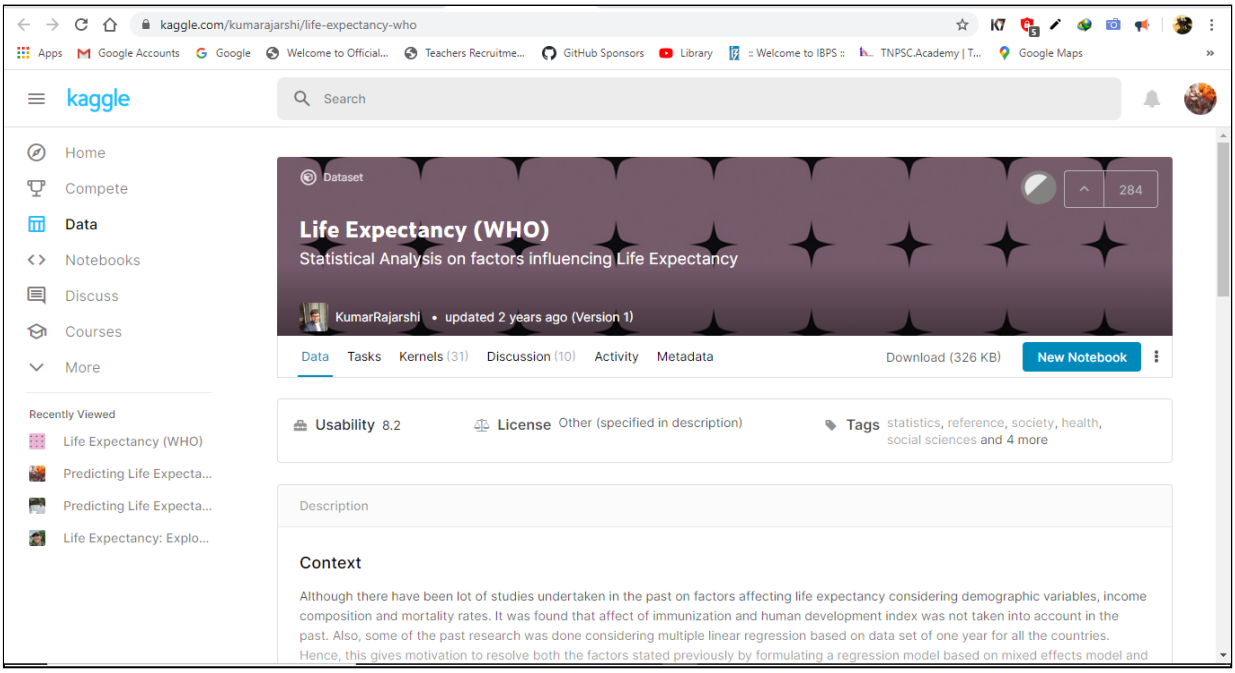
TSK-50595-Build A Machine Learning Model And Create Endpoints For Node-Red Integration:

I am going to build the model using Auto AI experiment.

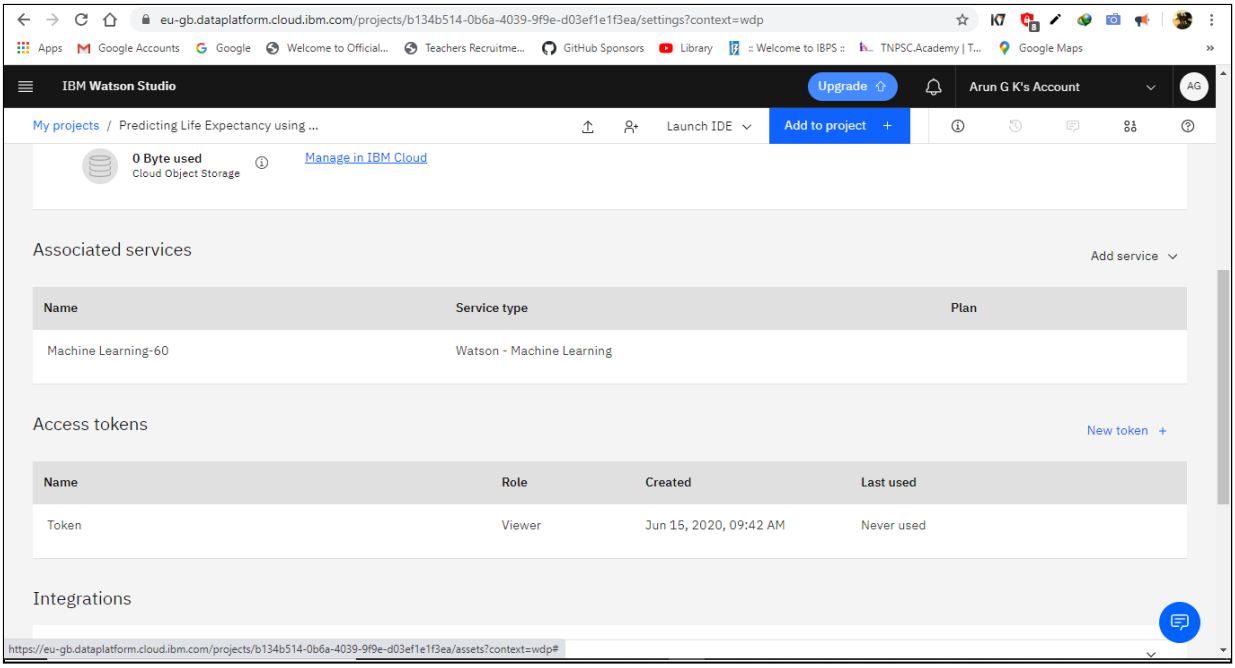
TSK-50596-Build Node-Red Flow to Integrate Services :

I am going to build the model using Auto AI experiment.

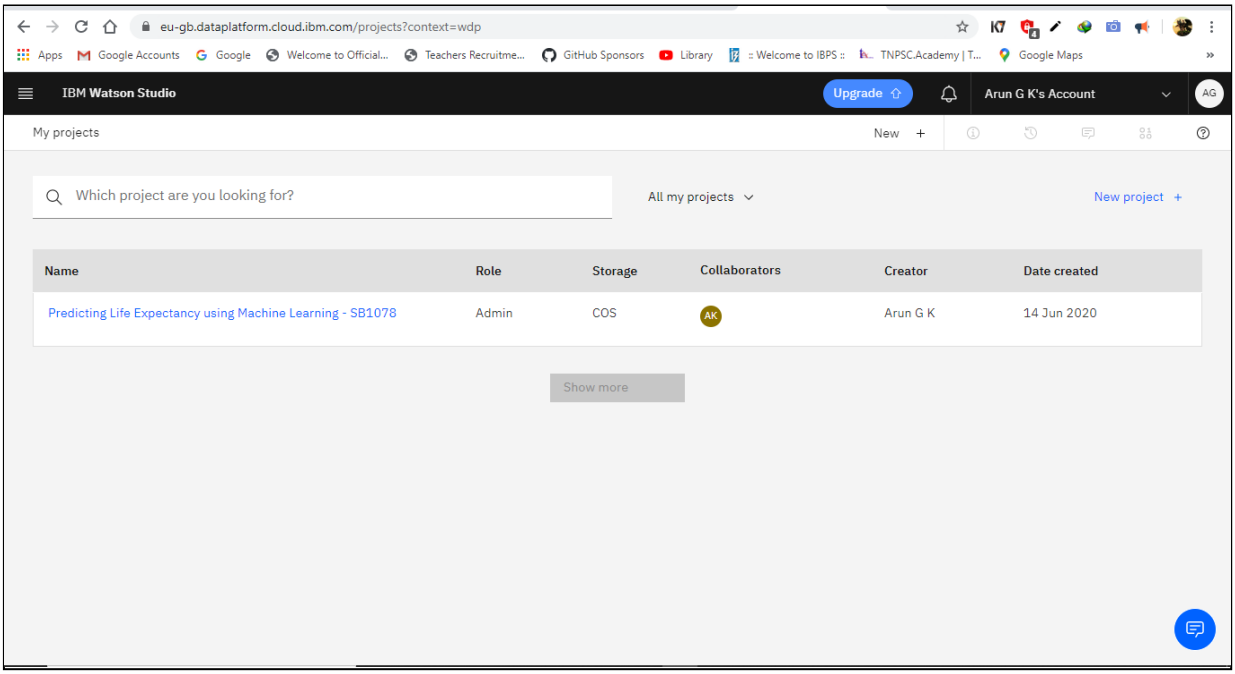
TSK-50597-Collect The Dataset For The Project :



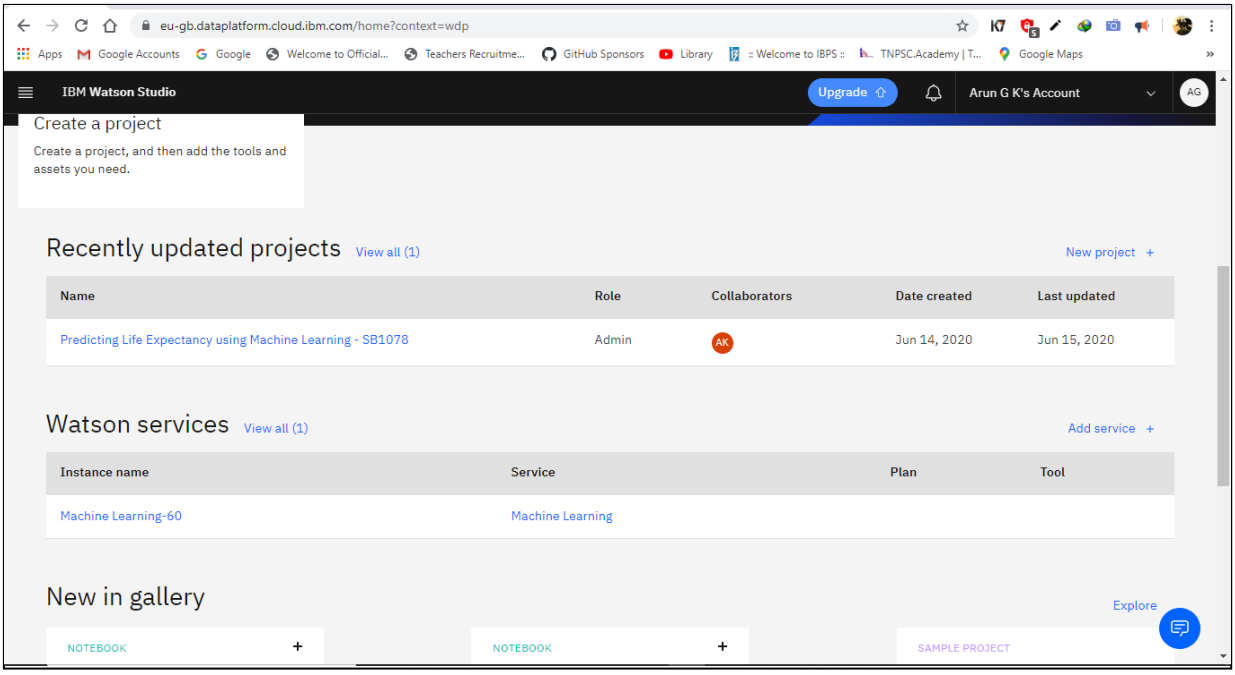
TSK-50598-Create Necessary IBM Cloud Services :



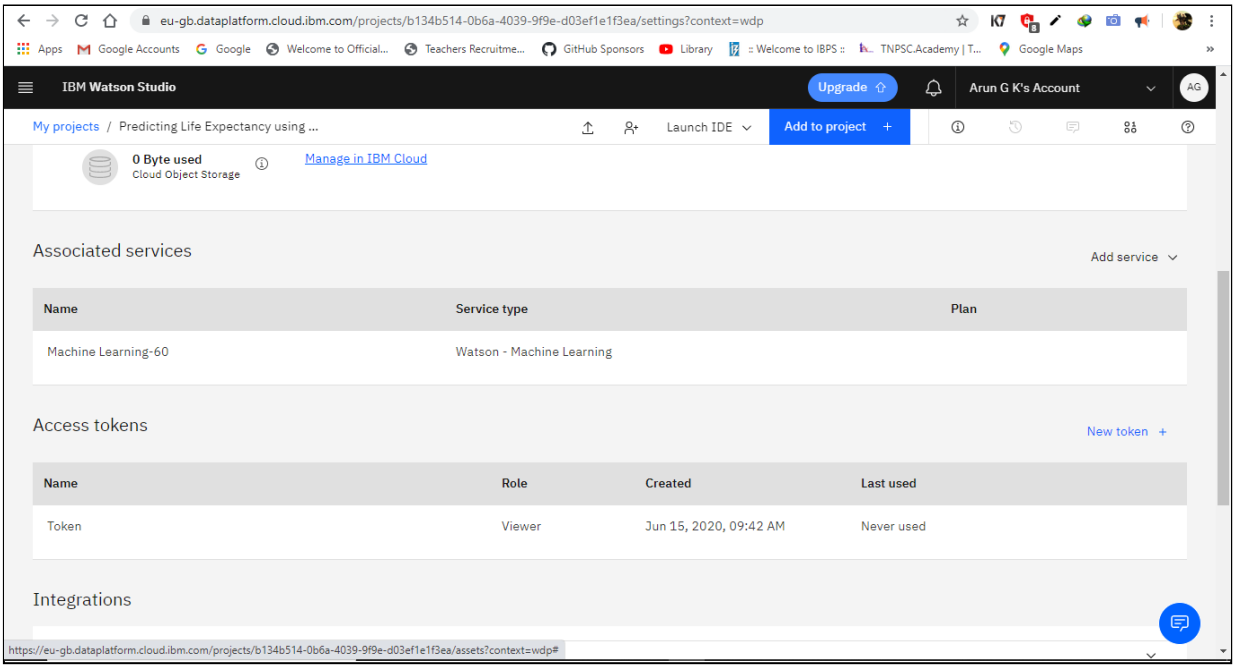
TSK-50599-Create a Watson Studio Project :



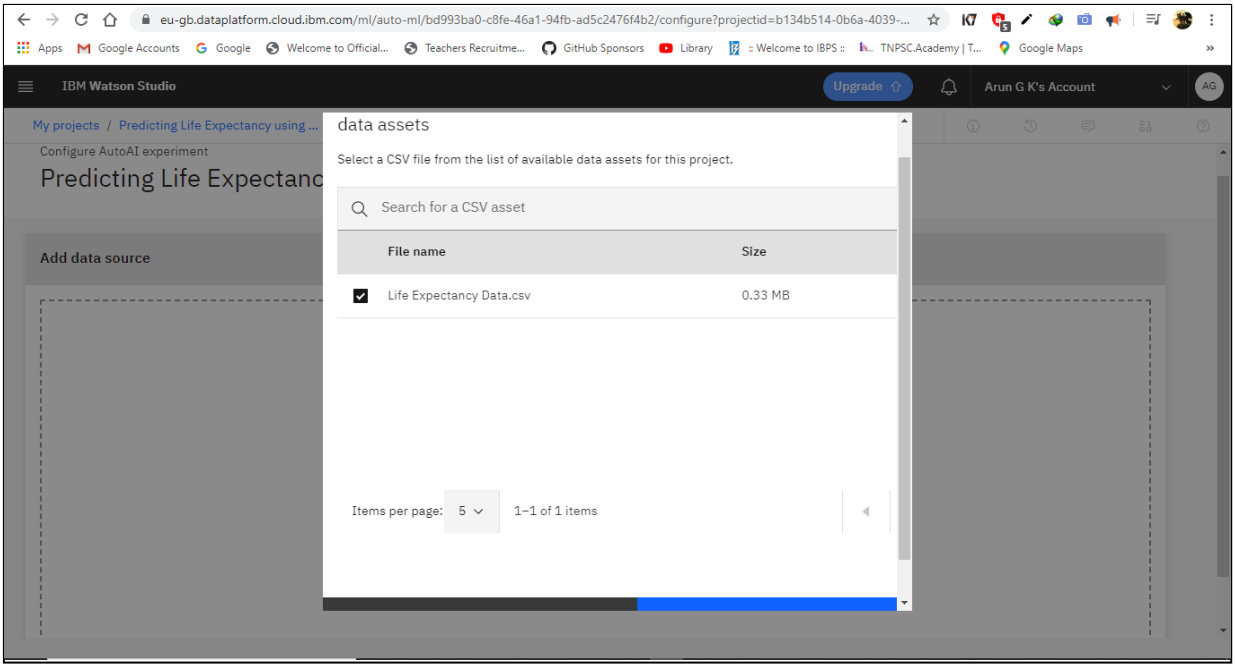
TSK-50600-Configure Watson Studio :

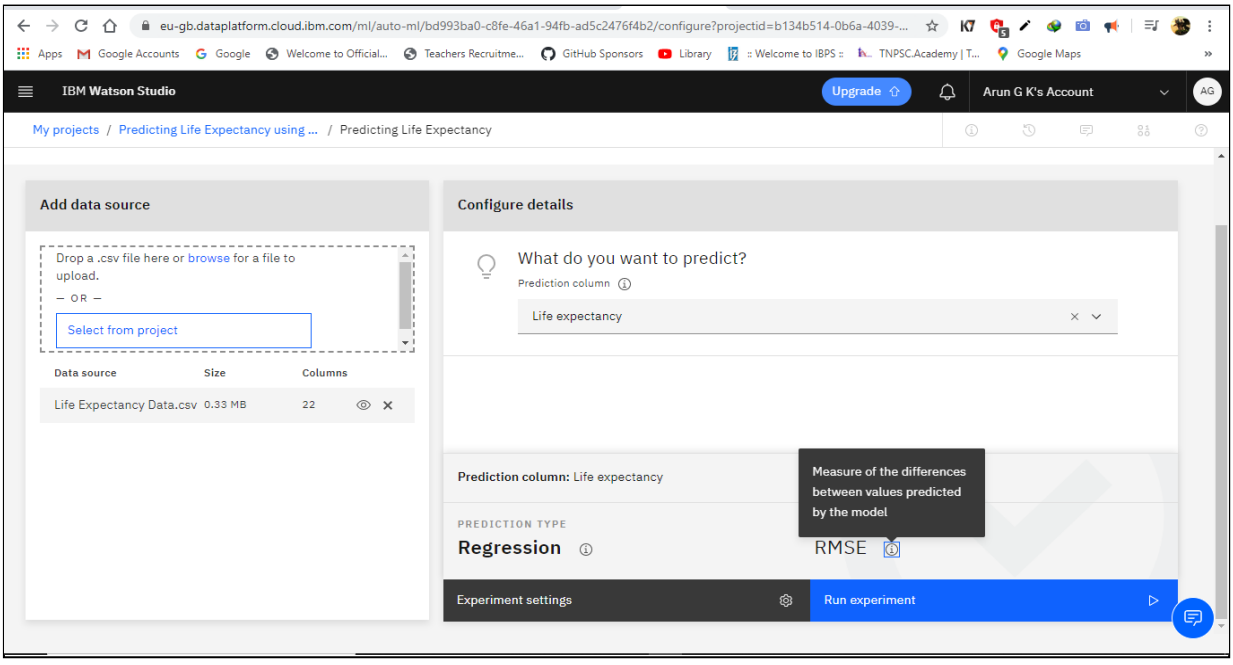


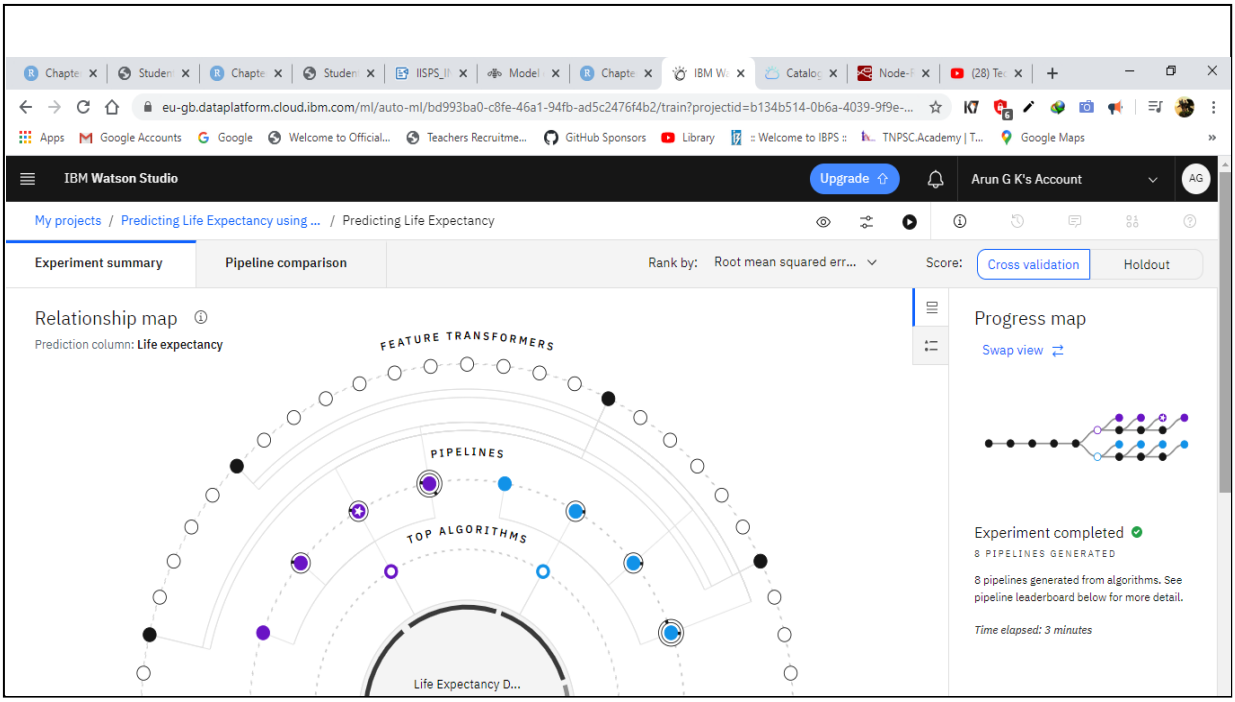
TSK-50601-Create Machine Learning Service :

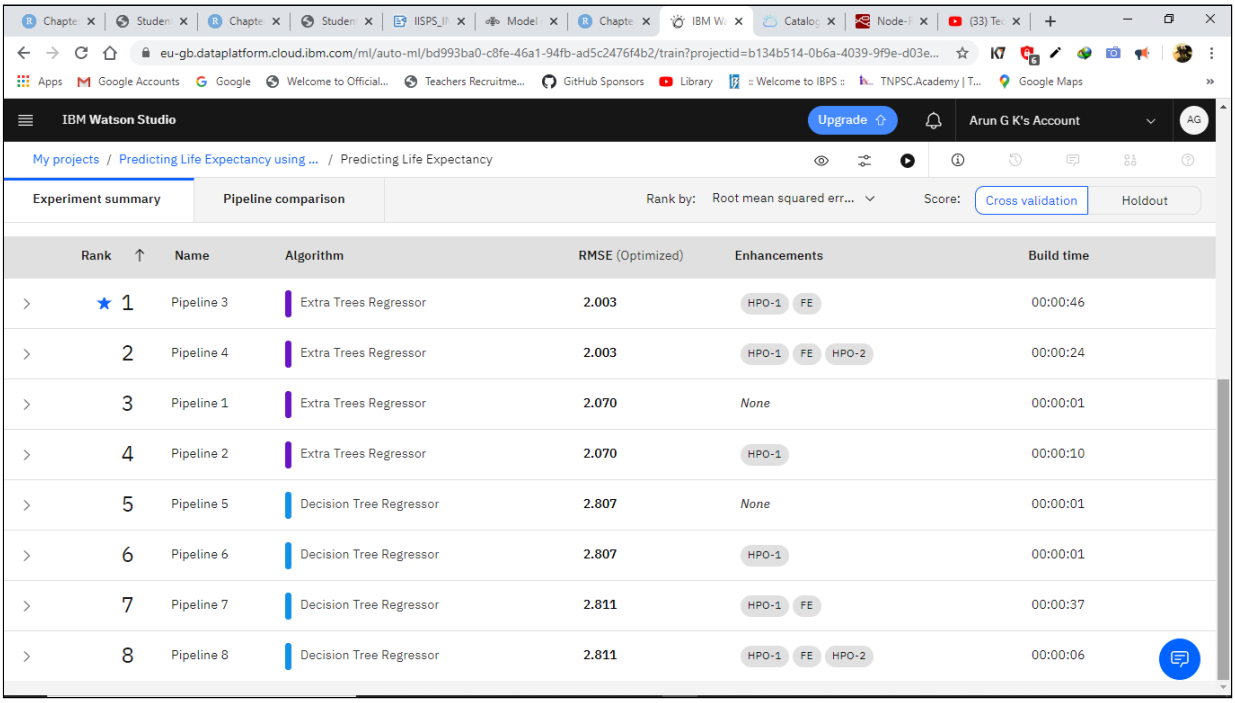


TSK-50602 - Import Dataset And Create Auto AI experiment :

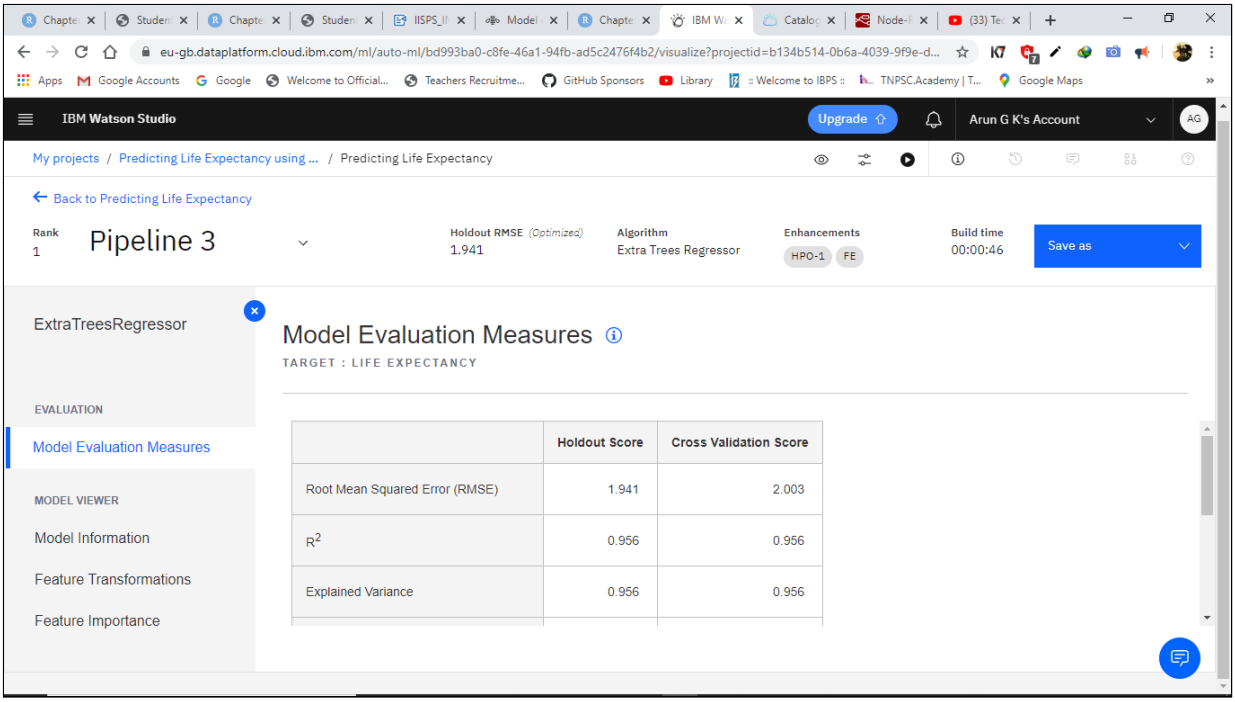


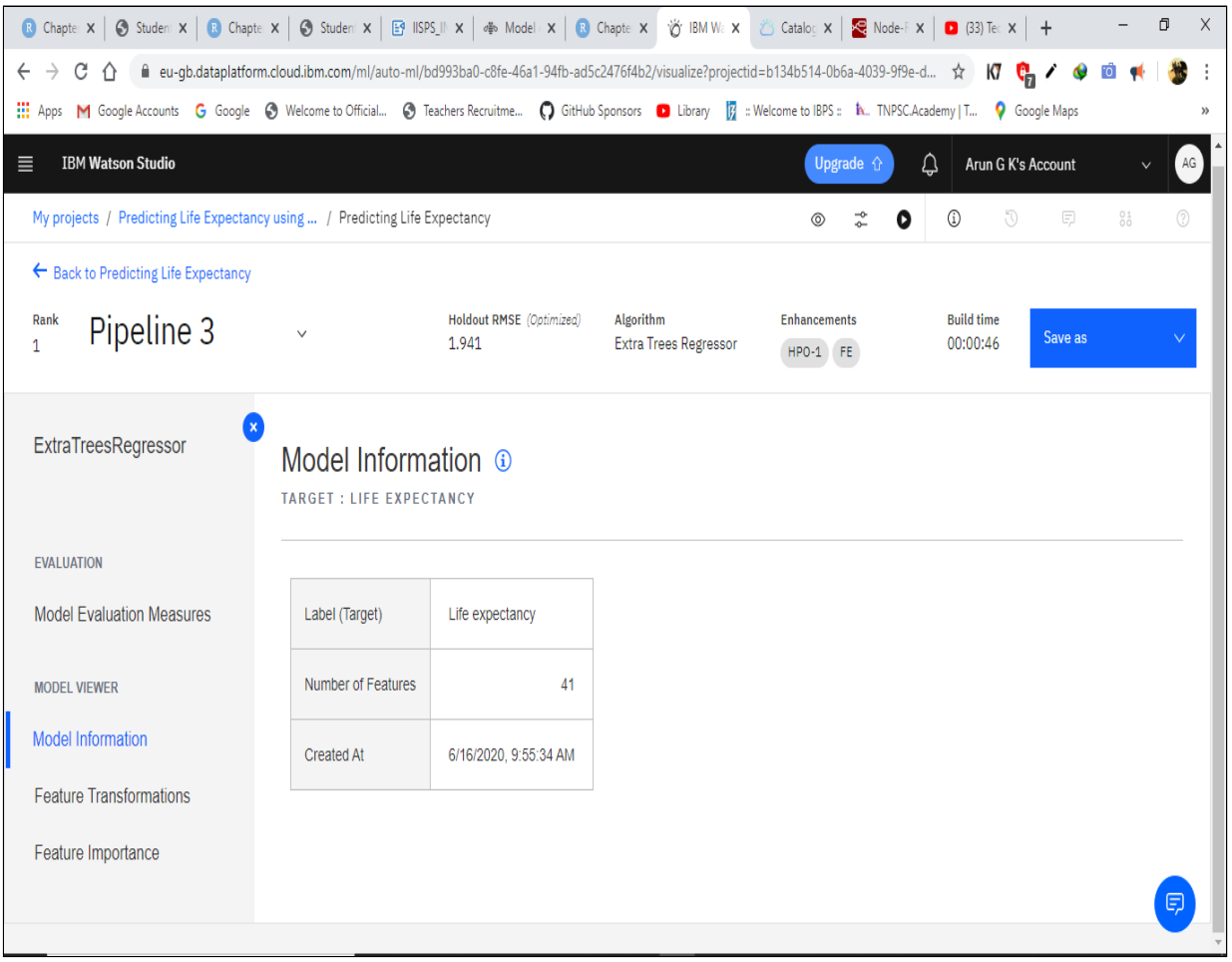


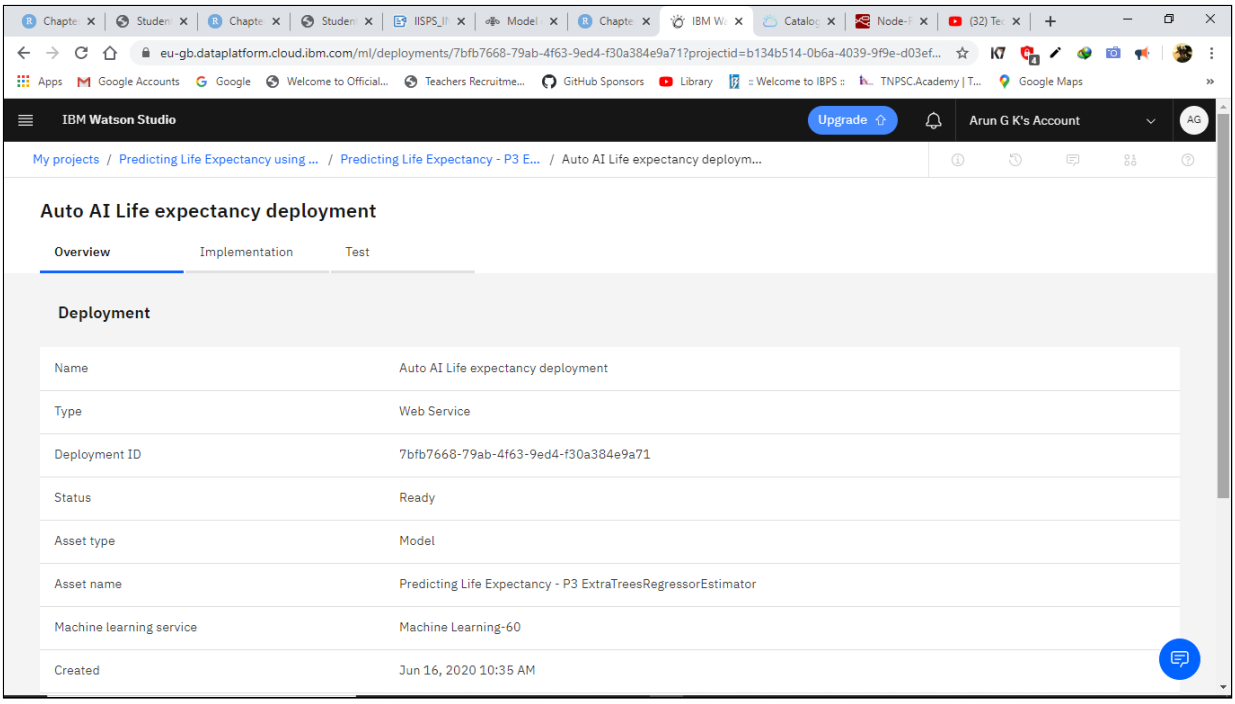




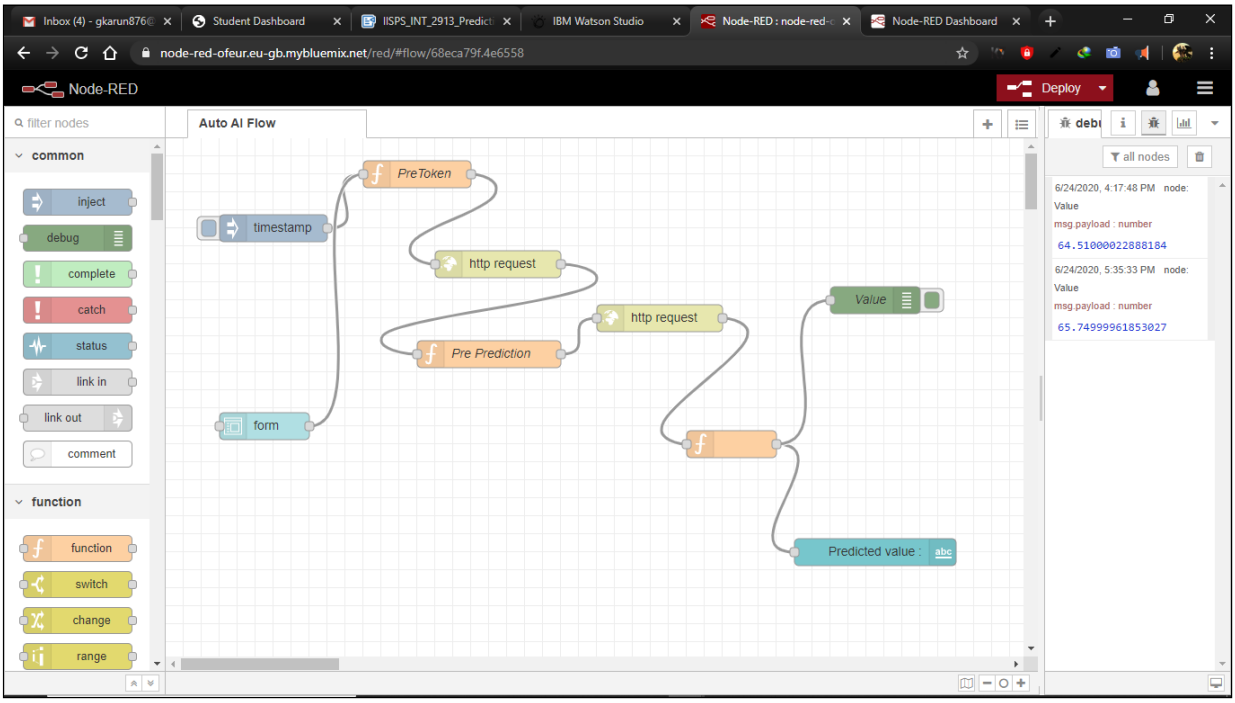
Rank	Name	Algorithm	RMSE (Optimized)	Enhancements	Build time
★ 1	Pipeline 3	Extra Trees Regressor	2.003	HPO-1 FE	00:00:46
2	Pipeline 4	Extra Trees Regressor	2.003	HPO-1 FE HPO-2	00:00:24
3	Pipeline 1	Extra Trees Regressor	2.070	*None*	00:00:01
4	Pipeline 2	Extra Trees Regressor	2.070	HPO-1	00:00:10
5	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

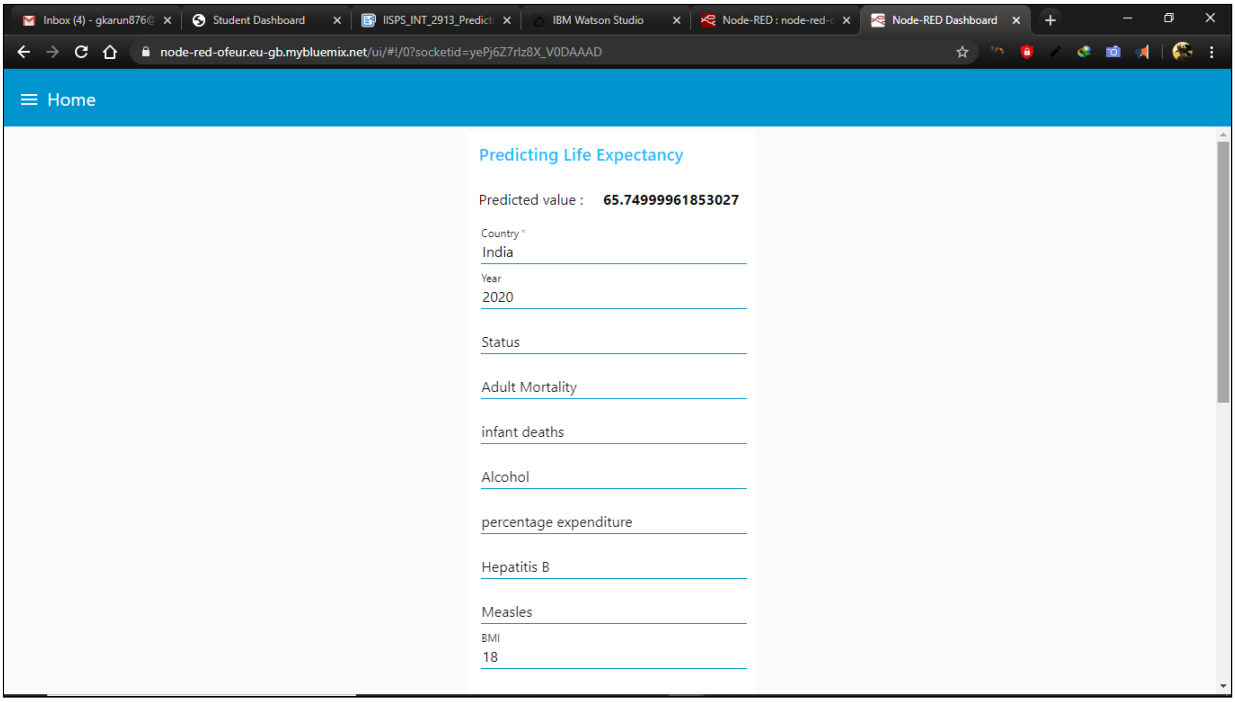

IBM Watson Studio
Upgrade
Arun G K's Account
My projects / Predicting Life Expectancy using ... / Predicting Life Expectancy
Back to Predicting Life Expectancy
Rank 1
Pipeline 3
Holdout RMSE (Optimized) 1.941
Algorithm Extra Trees Regressor
Enhancements HPO-1 FE
Build time 00:00:46
Save as
ExtraTreesRegressor
EVALUATION
Model Evaluation Measures
MODEL VIEWER
Model Information
Feature Transformations
Feature Importance
Model Evaluation Measures
TARGET : LIFE EXPECTANCY
Holdout Score
Cross Validation Score
Root Mean Squared Error (RMSE) 1.941 2.003
R2 0.956 0.956
Explained Variance 0.956 0.956


IBM Watson Studio
Upgrade
Arun G K's Account
My projects / Predicting Life Expectancy using ... / Predicting Life Expectancy
Back to Predicting Life Expectancy
Rank 1
Pipeline 3
Holdout RMSE (Optimized) 1.941
Algorithm Extra Trees Regressor
Enhancements HPO-1 FE
Build time 00:00:46
Save as
ExtraTreesRegressor
EVALUATION
Model Evaluation Measures
MODEL VIEWER
Model Information
Feature Transformations
Feature Importance
Model Information
TARGET : LIFE EXPECTANCY
Label (Target) Life expectancy
Number of Features 41
Created At 6/16/2020, 9:55:34 AM



TSK-50603-Build Node-Red Flow To Integrate Auto AI :




Inbox (4) - gkarun876@
Student Dashboard
IISPS_INT_2913_Predict
IBM Watson Studio
Node-RED : node-red-c
Node-RED Dashboard
node-red-ofeur.eu-gb.mybluemix.net/ui/#!/0?socketid=yePj6Z7rlz8X_V0DAAAD
Home
Predicting Life Expectancy
Predicted value : 65.74999961853027
Country *
India
Year
2020
Status
Adult Mortality
infant deaths
Alcohol
percentage expenditure
Hepatitis B
Measles
BMI
18