

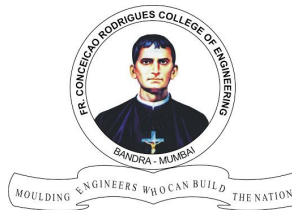
ML Web Application for Regression

A MINI-PROJECT REPORT

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1. Problem Definition

To design a top-notch web based application to train different types of regression models namely:

- a. Linear Regression
- b. Lasso Regression
- c. Ridge Regression
- d. Bayesian Ridge Regression

and use the same models in order to make predictions for any dataset given by the user. The Web application can also be used to visualize the datasets and derive key insights from it.

2. Requirements

- a. **VueJS:** Vue js is used in order to create the frontend web application. It is recommended to have the latest version of the same installed.

The following node packages are used in the development of web application:

- I. **Axios:** Axios is a node package used for Cross Origin Resource Sharing, used for connecting Python with the designed front end using REST APIs.
- b. **Python:** The system will require python installed, along with the following libraries:
 - i. Sci-kit learn
 - ii. Os
 - iii. Matplotlib
 - iv. Seaborn
 - v. Pandas
 - vi. Numpy
 - vii. Flask: Flask is used in order to run the python code for the models in the backend and to return the results to the Node js Server.

3. Working

Steps to run the project:

1) In the folder named "web-app", run "npm install" (this is to install any library from npm needed)

Then run the command "npm run serve" (to run the web app server)

2) In the folder named "api", run "pip install -r requirements.txt" (this is to install any python libraries for flask server)

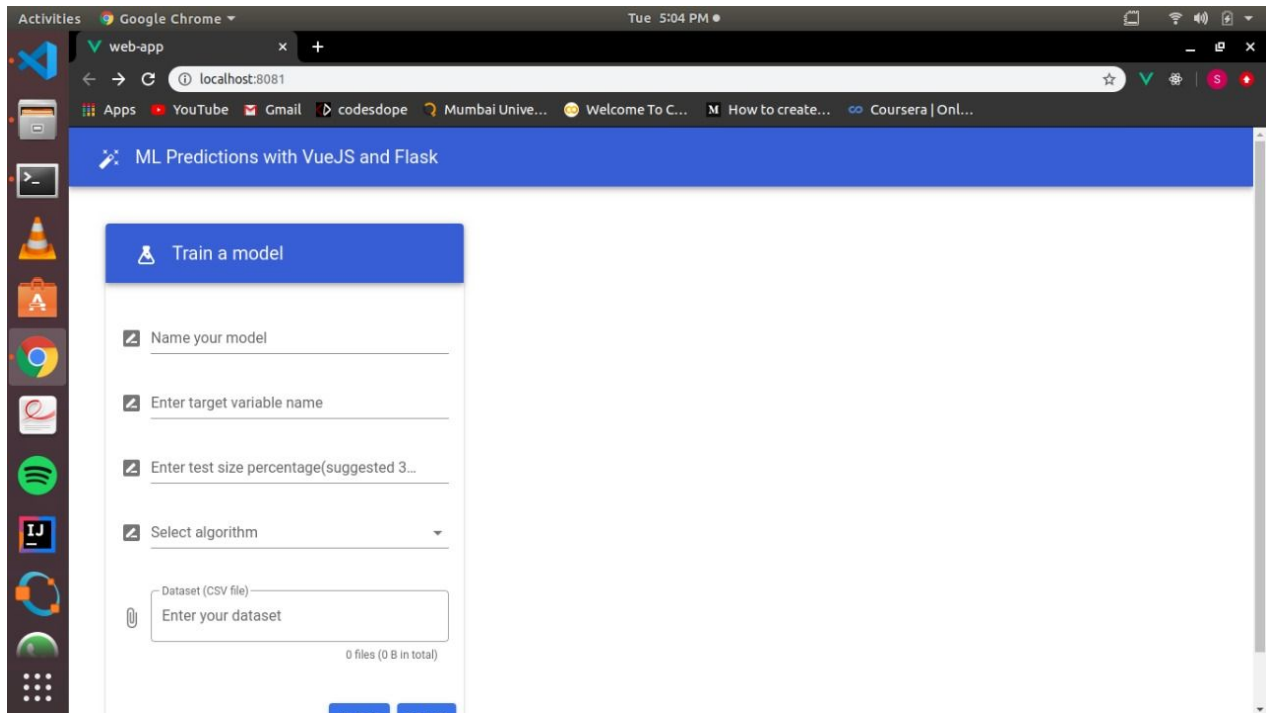
Then run the command "python app.py" (to run the flask server)

4. Link

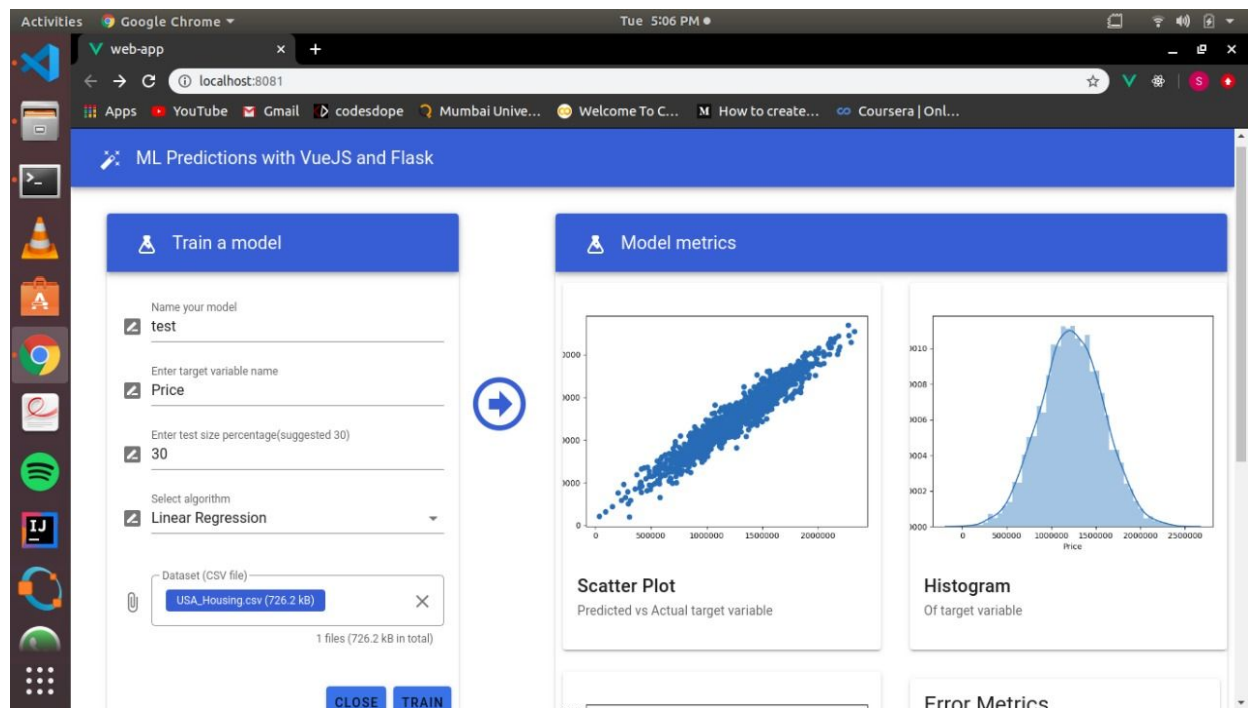
<https://github.com/sanfernoronha/ml-examples-vuejs-flask>

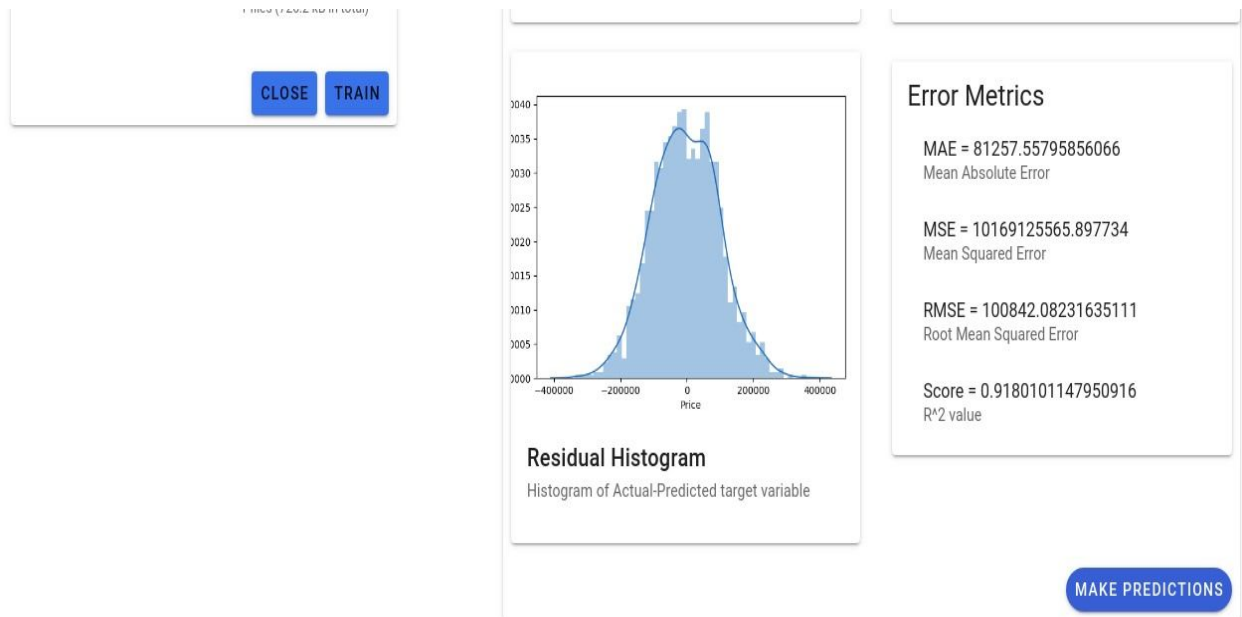
5. Screenshots

Beginning with selection of type of Model you need, specify test size and select the dataset .csv file:



On clicking on train the model gets trained and Model Metrics along with the results of Exploratory Data Analysis is done:





On Clicking “Make Predictions”, user needs to input data for the required features:

Test your model

- ☒ Avg. Session Length
- ☒ Time on App
- ☒ Time on Website
- ☒ Length of Membership

CLOSE **PREDICT**

Once user has filled the data into the given fields on clicking on Predict, Predictions for Target variable is done:

ML Predictions with VueJS and Flask

Test your model

Avg. Area Income
79545.4

Avg. Area House Age
5.68

Avg. Area Number of Rooms
7.01

Avg. Area Number of Bedrooms
4.07

Area Population
23086

Price : 1224574.4547728086

CLOSE **PREDICT**

On selection of different dataset and different Regression Algorithm:

Train a model

Name your model
anotherdataset

Enter target variable name
Yearly Amount Spent

Enter test size percentage(suggested 30)
30

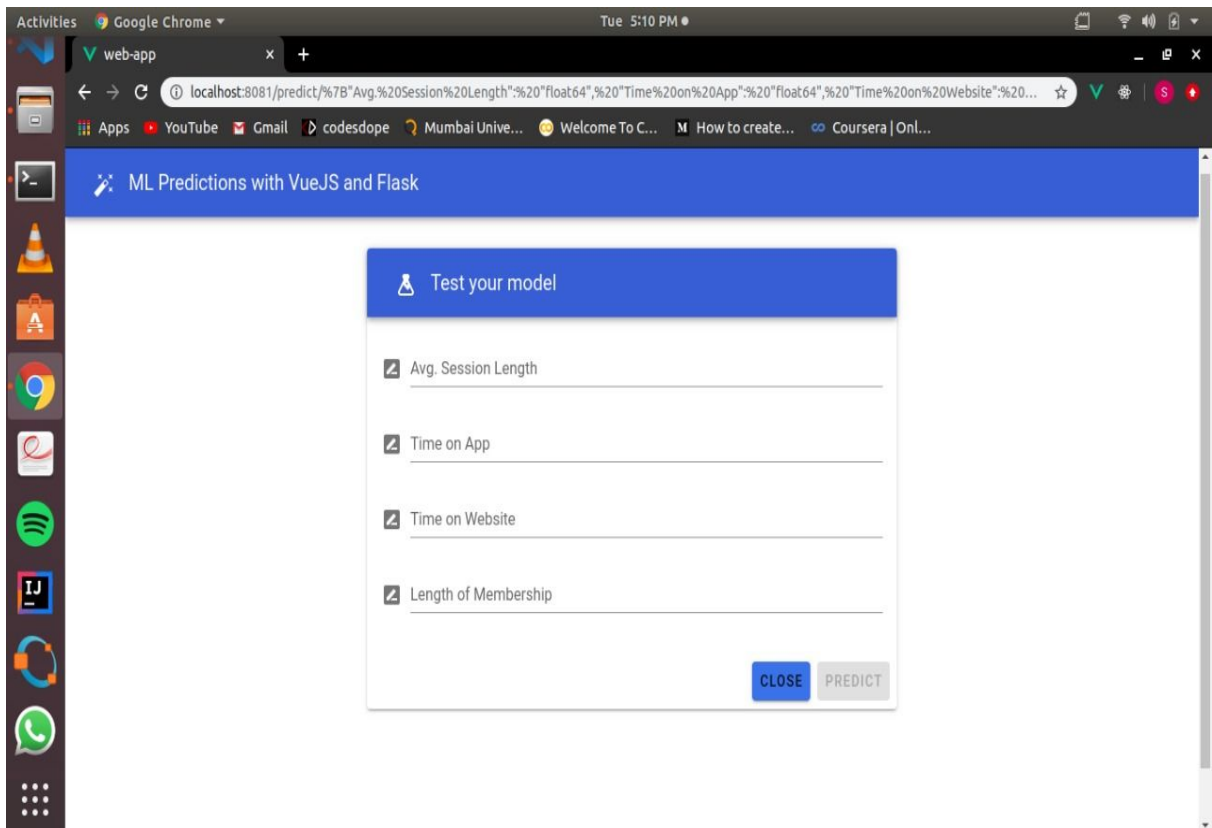
Select algorithm
Lasso Regression

Dataset (CSV file)
Ecommerce Customers (87.4 kB)

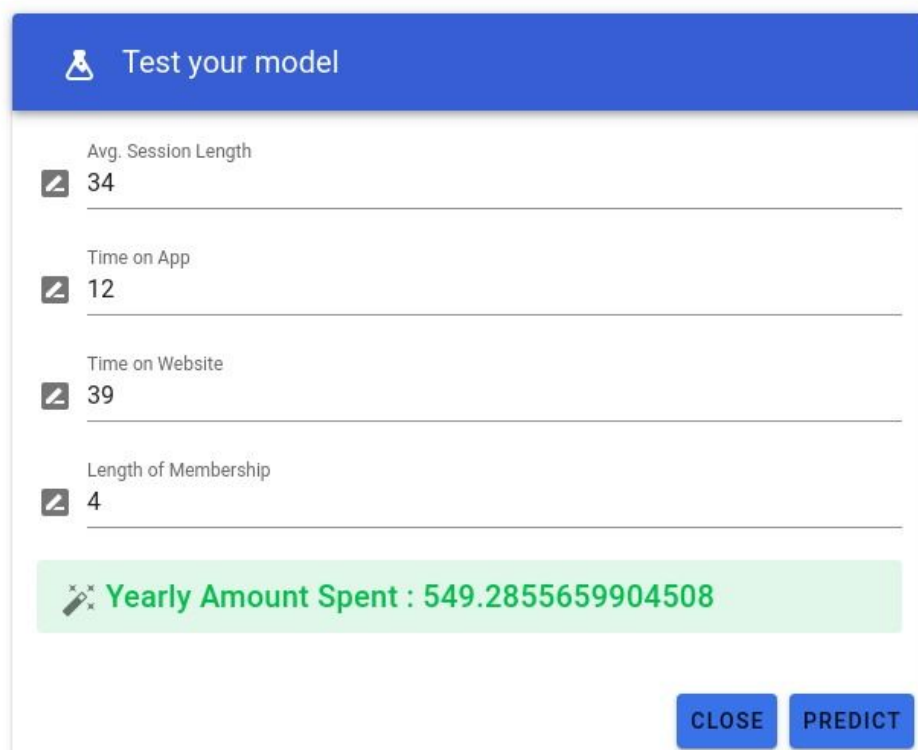
1 files (87.4 kB in total)

CLOSE **TRAIN**

After training is completed and we click on “Make Predictions” the fields as we see are being generated dynamically depending on the number of features in the provided dataset :



Finally the predictions are made the target variable is also generated dynamically



6. Flow Diagram

