



Insurance Premium Prediction

Project Architecture

Domain: Machine Learning

Creator: Narendran M

Date: 25.11.2023

ARCHITECTURE

Data Preparation

Data
Preprocessing



Exploratory
Data Analysis



Feature
Engineering



Model

Development

Model
Evaluation



Model
Evaluation



Model
implementation



Code
deployment on
cloud

Deployment

Deployment

Committing code
on Github



Run Github
actions and deploy
using CodeRunner



Deploying the
code on AWS EC2

ARCHITECTURE DESCRIPTION

DATA PREPARATION

DATA DESCRIPTION

The health condition data form the insurance company. The goal of this project is to build a prediction model using multiple machine learning techniques and to use a template to document the end-to-end stages. We're trying to predict the expenses the client will make on the premium of insurance.

DATA PREPROCESSING

In data preprocessing step, we check if there missing data, duplicate values, and data types of each feature. In our dataset, there was not any null and duplicate values

MODEL DEVELOPMENT

MODEL IMPLEMENTATION

After train and test splitting, pipeline containing Standard Scaler and One Hot Encoder was fitted to several models such as Linear Regression, SVR, Decision Tree Regressor and Random Forest Regressor. Their R2 score were obtained. And it was determined that Random Forest Regressor performs better than other models.

MODEL EVALUATION

Test dataset is used to evaluate the model. A percentage of the dataset was separated for testing. Predicted results of the model are compared with the actual data to check the amount of error.

DEPLOYMENT

DESIGNING FORM WITH HTML

For this project, a form is built on HTML.

DESIGNING A SERVER

A server should be created to run the application continuously. Flask server is built.

CODE DEPLOYMENT ON CLOUD

The codes for this machine learning model should be deployed to the cloud, so that when data is entered into the application, our code runs, and a user gets the result online.

DEPLOYMENT PROCESS

The code was first committed on Git hub. The pipeline was created between Git and AWS. Then the code was deployed to the AWS.