iNeuron

Insurance Premium Prediction

Project Architecture

Domain: Machine Learning

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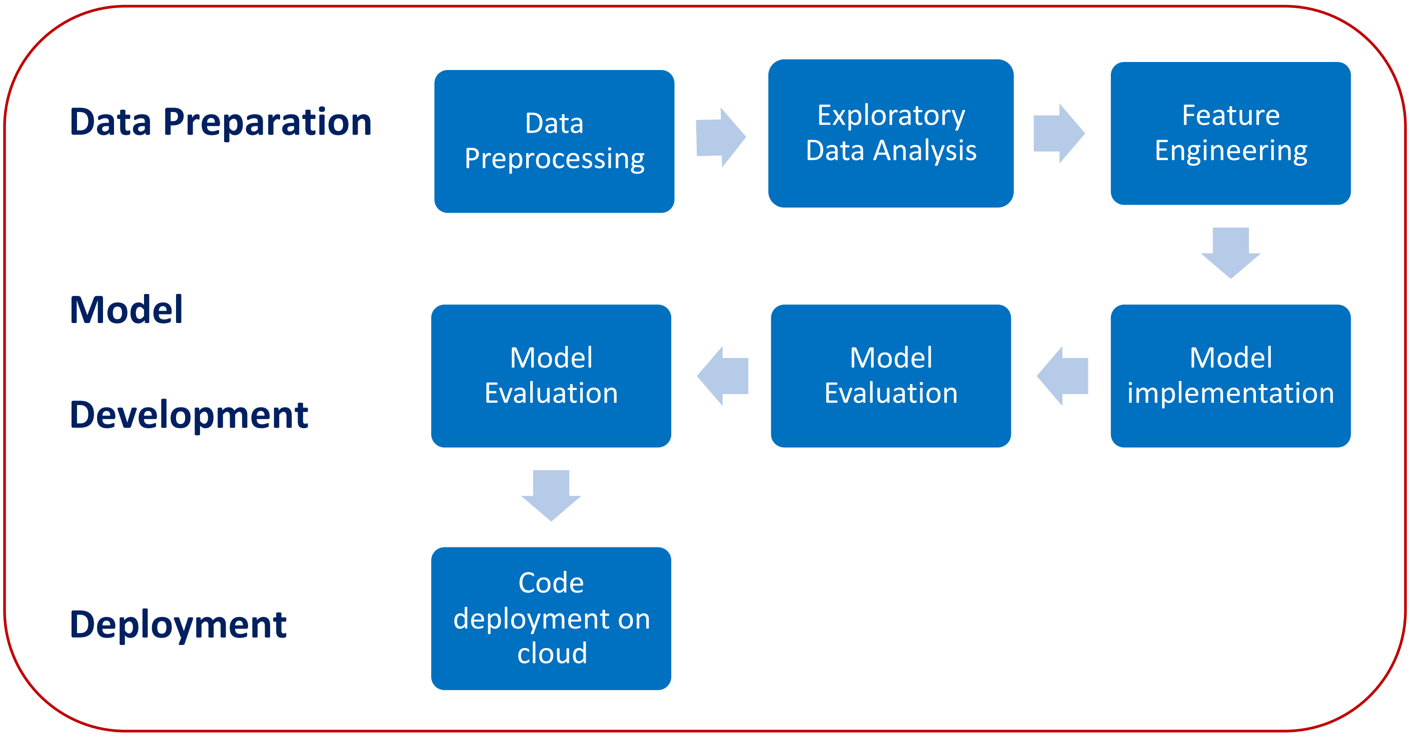
Date: 15.04.2024

ARCHITECTURE



Data Preparation

Data Preprocessing

Exploratory Data Analysis

Feature Engineering

Model

Development

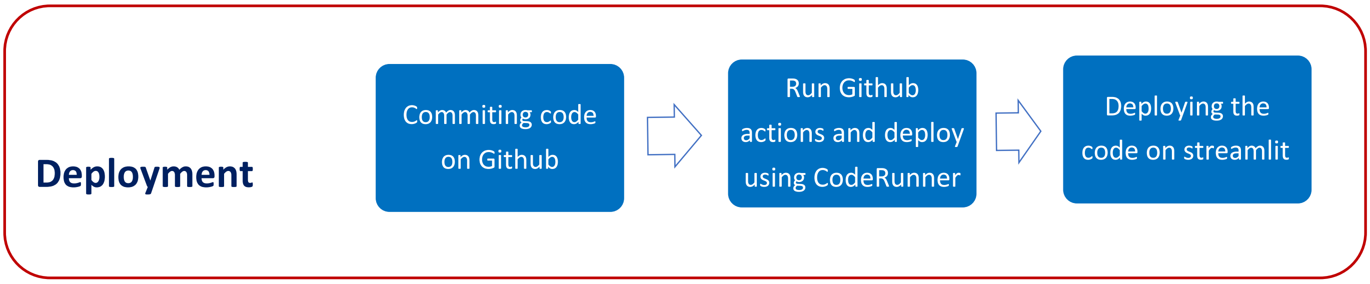
Model implementation

Model Evaluation

Model Evaluation

Deployment

Code deployment on cloud



Deployment

Commiting code on Github

Run Github actions and deploy using CodeRunner

Deploying the code on streamlit

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 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 Streamlit. Then the code was deployed to the Streamlit.