Deployment report

Loan Prediction by

Zhaklin Yanakieva

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Abstract

Machine learning research typically focuses on optimization and testing on a few criteria, but deployment in a public policy setting requires more. For machine learning models to have real-world benet and impact, effective deployment is difficult. In this report, I describe the implementation of the deployment. My decision of how the project will be delivered to production is further explained and the evaluation is made after that .

Introduction

The goal of building a machine learning model is to solve a problem, and a machine learning model can only do so when it is in production and actively in use by consumers. As such, model deployment is as important as model building. [1] Deployment is part of the Machine Learning Lifecycle. Broadly, the entire machine learning lifecycle can be described as a combination of 6 stages:

Stage 1: Problem Definition

The first and most important part of any project is to define the problem statement. Here, we want to describe the aim or the goal of our project and what we want to achieve at the end.

Stage 2: Hypothesis Generation

Once the problem statement is finalized, we move on to the hypothesis generation part. Here, we try to point out the factors/features that can help us to solve the problem at hand.

[1] https://stackoverflow.blog/2020/10/12/how-to-put-machine-learning-models-into-production/

Stage 3: Data Collection

After generating hypotheses, we get the list of features that are useful for a problem. Next, we collect the data accordingly. This data can be collected from different sources

Stage 4: Data Exploration and Pre-processing

After collecting the data, we move on to explore and pre-process it. These steps help us to generate meaningful insights from the data. We also clean the dataset in this step, before building the model

Stage 5: Model Building

Once we have explored and pre-processed the dataset, the next step is to build the model. Here, we create predictive models in order to build a solution for the project.

Stage 6: Model Deployment

Once you have the solution, you want to showcase it and make it accessible for others. And hence, the final stage of the machine learning lifecycle is to deploy that model.

Modelling

After the exploring of the models and comparing the three of them, the results showed that it is best to use the Random forest. It showed the best results after the training.

I will be deploying this loan prediction model so that it can be accessed by others.

#put graphs

Deployment

The last before the AI project is done is the deployment. After the training of models, one is selected, the one with the best performance. And to do the deployment, I will use Streamlit, which is a recent and the simplest way of building web apps and deploying machine learning and deep learning models.

First, I will explain the tool I am using for the deployment and after that, I will explain the deployment itself.

Introduction to Streamlit

As per the founders of Streamlit, it is the fastest way to build data apps and share them. It is a recent model deployment tool that simplifies the entire model deployment cycle and lets you deploy your models quickly. I have been exploring this tool for the past couple of weeks and as per my experience, it is a simple, quick, and interpretable model deployment tool.

Model Deployment of the Loan Prediction model using Streamlit:

Evaluation

Summary