Final Report of Project Credit Card Fraud Prediction using IBM Auto AI

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Project Build-A-Thon 2021

1. Introduction

1.1. Overview

This project discusses building a system for creating predictions that can be used in different scenarios. It focuses on predicting fraudulent transactions, which can reduce monetary loss and risk mitigation.

1.2. Purpose

This project aims at building a web App which automatically estimates if there is a fraud risk by taking the input values.

2. Litterateur survey

2.1. Existing Problem

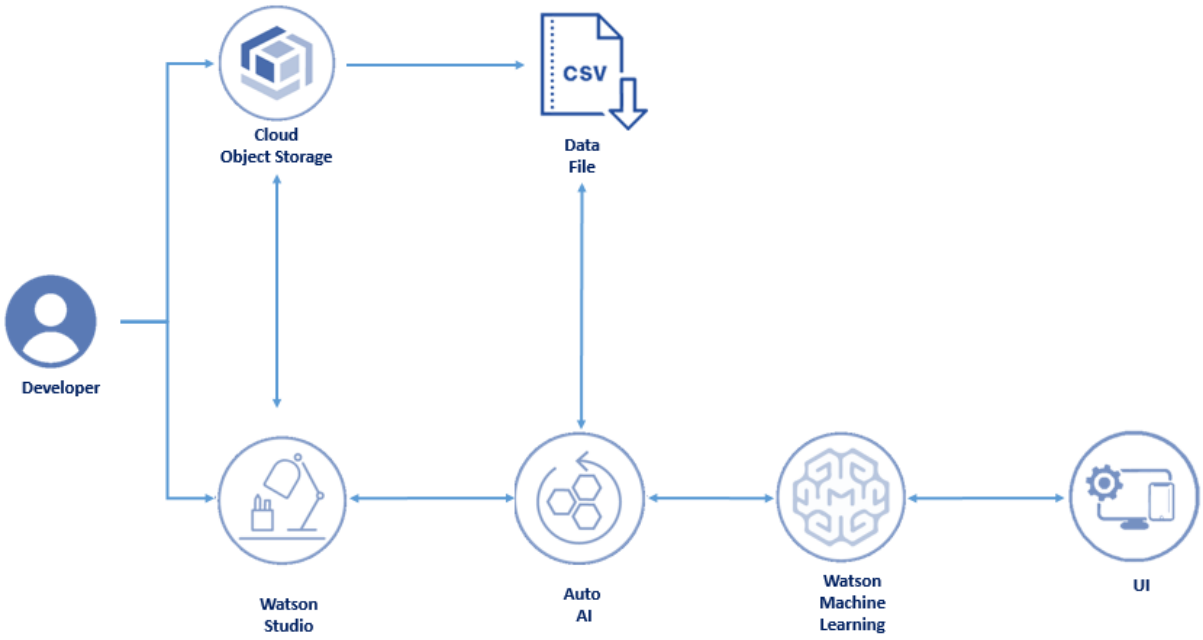
Fraud detection is actually a very important topic especially for financial sectors. We should always be aware of it. Machine Learning models are various and have a lot of parameters that make the task of creating a proper model for prediction a hard task.

2.2. Proposed Solution

IBM Auto AI is a good service provided by IBM cloud that help students and new engineering students in having a close look at AI Models and how to build them.

3. Theoretical Analysis

3.1. Block diagram



3.2. Hardware/Software designing

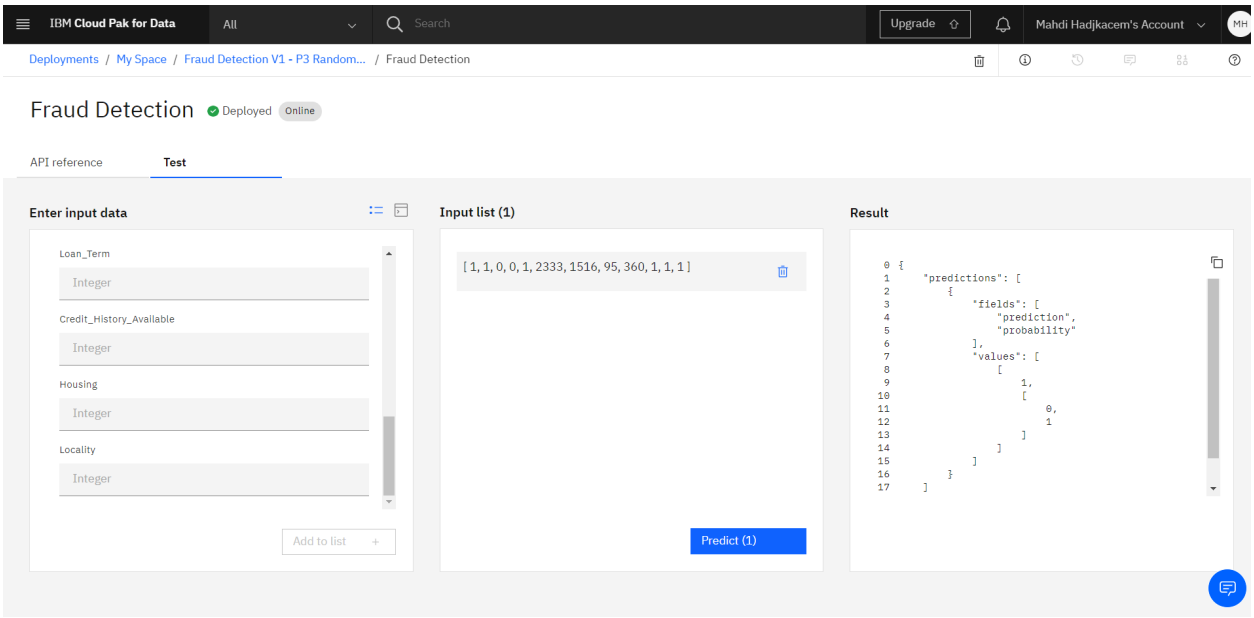
IBM Watson Studio

IBM Machine Learning

Node-Red

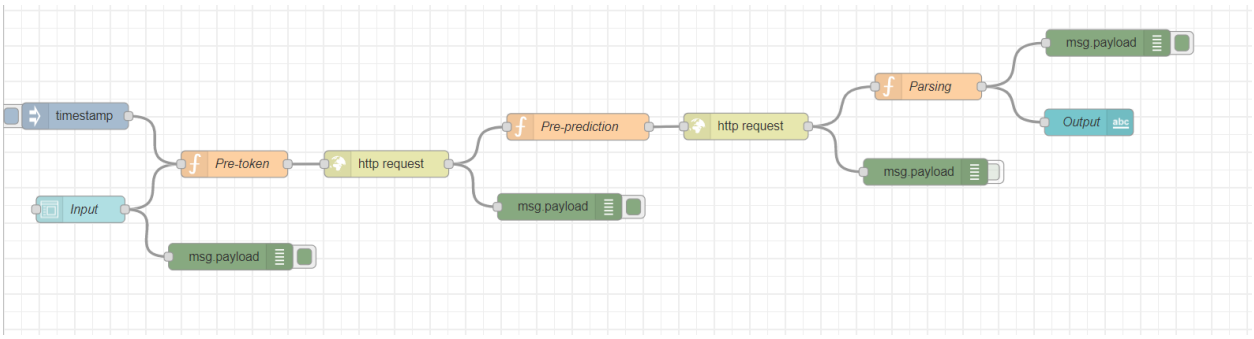
IBM Cloud Object Storage

4. Experimental investigations



The results provided by the model were very close to the data provided for testing as well as it has some approximate values of probability of Fraud Risk.

5. FLOWCHART



6. RESULT

After Model Deployment, the User Interface has this appearance

Credit Card Fraud Prediction

Gender *
1

Married *
1

Dependents *
0

Education *
1

Self Employed *
1

Applicant Income *
3000

Coapplicant Income *
0

Loan Amount *
66

Loan Term *
360

Credit History Available *
1

Housing *
1

Locality *
1

SUBMIT CANCEL

Fraud Risk **1**

7. Advantages and Disadvantages

7.1. Advantages

This Web application can help user to predict the fraud risk and minimize fraud. Also the selection of models is easy for users and give him the ability which model to work with. Added to that, This service is time saver: in few minutes you can have the best models trained and ready to use. The IBM Cloud service is an easy service to play with get the best out of it.

7.2. Disadvantages

Less flexibility in dealing with Data

Users could not know the real approach of models and do they work properly.

8. Applications

Finance

Legal

Banking

9. Conclusion

This project gave the opportunity to create an application that help to minimize fraud and monetary loss and help financial field to deal with these problems.
through this, I have been able to improve my skills and to learn more about IBM Cloud Platform and how to use it.

10. Future Scope

Dealing more with Math aspects of these models and learn more about them. Also Deep Learning and participating in

Hackathons and Build-A-Thons to improve practical skills. Also, getting into the Computer vision field which will help in the career.

11. Bibliography

11.1. Author

Mahdi Hadjkacem , a 1st-year engineering student at Higher School of Communication of Tunis.

11.2. Project title

SPS-9016-Credit Card Fraud Prediction using IBM Auto AI

GitHub Link :
https://github.com/smartinternz02/SPS-9016-Credit-Card-Fraud-Prediction-using-IBM-Auto-AI
Node Red UI Flowchart Link:
https://node-red-build-a-thon.mybluemix.net/red/#flow/35d49ce6.aaf194
Video Explanation link :
https://drive.google.com/file/d/13rlOQbN1C8ESaHyNF748NUzAmV29ZqyZ/view?usp=sharing

The Notebook is uploaded to GitHub