Prediction Of Health Insurance Preminum Costs With IBM Auto AI Service

1.INTRODUCTION

1.1 Overview

As we see the value of gross insurance premiums worldwide continue to skyrocket past 5 trillion dollars, we know that most of these costs are preventable. For example, just by eliminating smoking and lowering your BMI by a few points might mean shaving thousands of dollars from your premium charges. In this application, we study the effects of age, smoking, BMI, gender, and region to determine how much of a difference these factors can make on your insurance premium. By using our application, customers see the radical difference their lifestyle choices make on their insurance charges. By leveraging artificial intelligence (AI) and machine learning, we help customers understand just how much smoking increases their premium by predicting how much they will have to pay within seconds.

1.2 Purpose

Using IBM AutoAI, we automate all of the tasks involved in building predictive models for different requirements. You see how AutoAI generates great models quickly, which saves time and effort, and aids in a faster decision-making process. You create a model from a data set that includes the age, gender, BMI, number of children, smoking preferences, region, and charges to predict the health insurance premium cost that an individual pays.

2. LITERATURE SURVEY

2.1 Existing problem

This project aims at building a web App which automatically estimates premium cost by taking the input values. Using IBM AutoAI, we automate all of the tasks involved in building predictive models for different requirements. You create a model from a data set that includes the age, gender, BMI, number of children, smoking preferences, region, and charges to predict the health insurance premium cost that an individual pays.

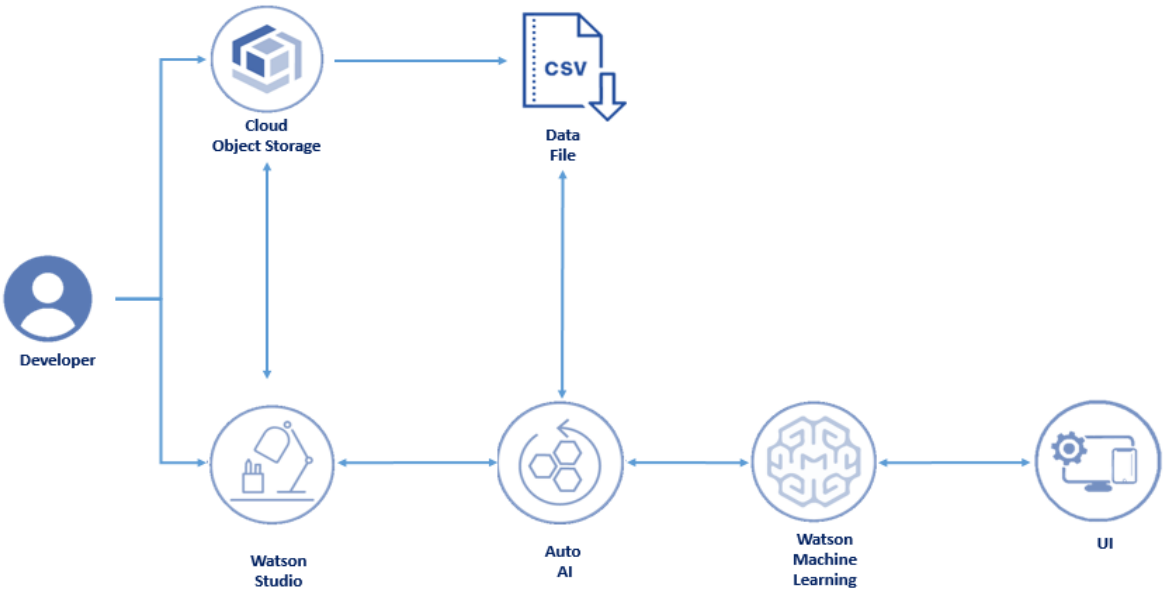
- The user creates an IBM Watson Studio Service, IBM Cloud Object Storage Service on IBM Cloud.
- The user uploads the insurance premium data file into Watson Studio.
- The user creates an AutoAI Experiment to predict an insurance premium on Watson Studio.
- AutoAI uses Machine Learning Service to create several models, and the user deploys the best performing model.
- We use Flask web application to connect to the deployed model and predict an insurance charge.

2.2 Proposed solution

We create a model from a data set that includes the age, gender, BMI, number of children, smoking preferences, region, and charges to predict the health insurance premium cost that an individual pays. we can use some proposed solution are we use to creates an IBM Watson Studio Service,and AutoAI uses Machine learning services to create serveral models but it asking to upgrade you account bue to that it will facing some problems remaining all ok .

3.THEORITICAL ANALYSIS

3.1 Block diagram



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- The user creates an IBM Watson Studio Service, IBM Cloud Object Storage Service on IBM Cloud.
- The user uploads the insurance premium data file into Watson Studio.
- The user creates an AutoAI Experiment to predict an insurance premium on Watson Studio.
- AutoAI uses Machine Learning Service to create several models, and the user deploys the best performing model.
- We use the Node-RED web application to connect to the deployed model and predict an insurance .

3.2 Hardware/Software designing

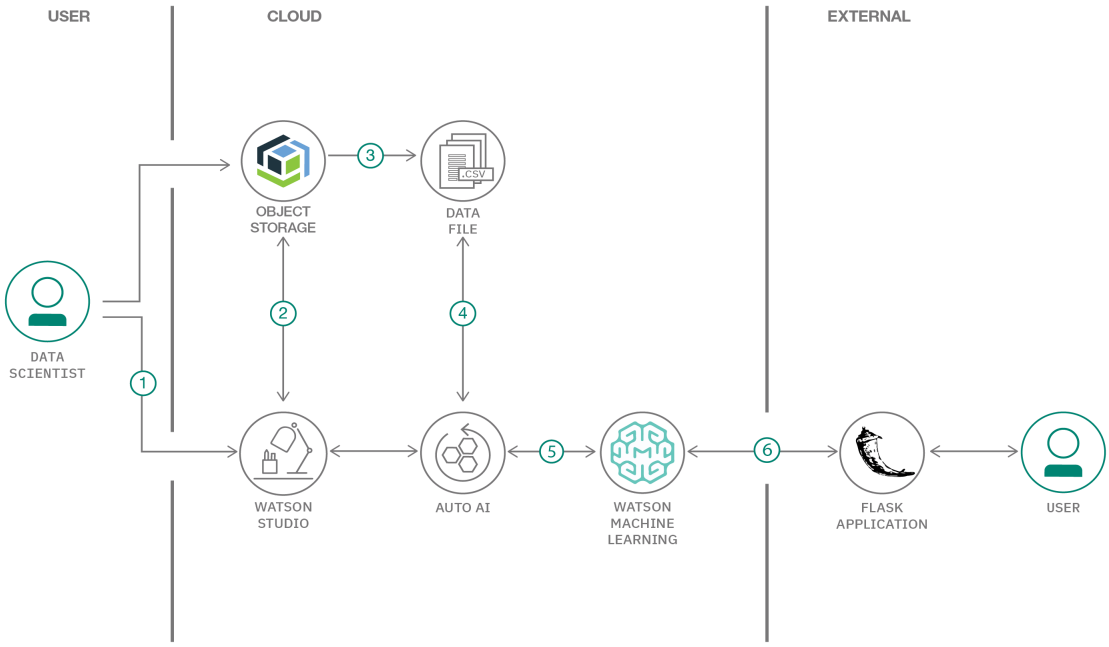
we use only software designing in Prediction Of Health Insurance Preminum Costs With IBM Auto AI Service the some software designing they are

1. IBM Cloud
2. IBM Watson Studio
3. Auto AI Experiment
4. Model Deployment
5. IAM Access Token
6. Node-red Service

4. EXPERIMENTAL INVESTIGATIONS

- Quickly set up the services on IBM Cloud to build the model
- Ingest the data and initiate the AutoAI process
- Build different models using AutoAI and evaluate the performance
- Choose the best model and complete the deployment
- Generate predictions using the deployed model by making REST calls
- Compare the process of using AutoAI and building the model manually
- Visualize the deployed model using a front-end application

5. FLOWCHART



6.RESULT

```
<!doctype html>
<html lang="en">

<head>
  <!-- Required meta tags -->
  <meta charset="utf-8">
  <!-- <meta name="viewport" content="widt
  <title>AutoAI Insurance Prediction</titl
  <link rel="stylesheet" href="https://cdn
  <link rel="stylesheet" href="https://max
  <script src="https://ajax.googleapis.com
  <script src="https://cdnjs.cloudflare.co
  <script src="https://maxcdn.bootstrapcdn
  <link rel="stylesheet" href="https://sta
    integrity="sha384-Vkoo8x4CGsO3+Hhxv8T/
  <meta name="viewport" content="width=dev
  <link rel="stylesheet" href="https://cdn
  <link rel="stylesheet" type="text/css" h
</head>

<body style="background-color: #d2deed">

  <div class="topnav" id="myTopnav">
    <a class="active" href="#"><i class="f
    <a href="#"><i class="fa fa-fw fa-enve
    <a href="https://github.com/IBM/predic
  </div>
```

7. ADVANTAGES

- Most of us are aware that advanced analytics and AI can help doctors

diagnose disease and treat patients better.

- Analytics and AI can improve healthcare benefits decisions.
- The secret sauce is our healthcare data combined with our analytical and AI technology.
- Improving productivity and saving money.

DISADVANTAGES

- Hospitals and health systems are emerging from a period of massive disruption with the challenge of adapting to shifting consumer and payer demands.
- future challenges already await – including new requirements around price transparency and interoperability.
- continuous change will require clinical, operational, and population-level insights and flexible, secure data management technologies that can facilitate efficient connections across the health ecosystem.
- With IBM® Watson Health®, healthcare providers can gain access to data analytics, consulting and data management solutions that can help accelerate transformation and optimize performance as they face the challenges of today – as well as those that lie around the corner.

8. APPLICATIONS

1. The user creates an IBM Watson Studio Service on IBM Cloud.
2. The user creates an IBM Cloud Object Storage Service and adds that to Watson Studio.
3. The user uploads the insurance premium data file into Watson Studio.
4. The user creates an AutoAI Experiment to predict an insurance premium on Watson Studio.
5. AutoAI uses Watson Machine Learning to create several models, and the user deploys the best performing model.
6. The user uses the Flask web application to connect to the deployed model and predict an insurance charge.

9. CONCLUSION

As we see the value of gross insurance premiums worldwide continue to skyrocket past 5 trillion dollars, we know that most of these costs are preventable. For example, just by eliminating smoking and lowering your BMI by a few points might mean shaving thousands of dollars from your premium charges. In this application, we study the effects of age, smoking, BMI, gender, and region to determine how much of a difference these factors can make on your insurance premium. By using our application, customers see the radical difference their lifestyle choices make on their insurance charges. By leveraging artificial intelligence (AI) and machine learning, we help customers understand just how much smoking increases their premium by predicting how much they will have to pay within seconds.

Using IBM AutoAI, we automate all of the tasks involved in building predictive models for different requirements. You see how AutoAI generates great models quickly, which saves time and effort, and aids in a faster decision-making process. You create a model from a data set that includes the age, gender, BMI, number of children, smoking preferences, region, and charges to predict the health insurance premium cost that an individual pays.

10. FUTURE SCOPE

The global healthcare industry is experiencing fundamental transformation as it moves from a volume-based business to a value-based business. With increasing demands from consumers for enhanced healthcare quality and increased value, healthcare providers and payers are under pressure to deliver better outcomes. Primary care physician and nursing shortages require overworked professionals to be even more productive and efficient. The cost dynamics of

healthcare are changing, driven by people living longer, the pervasiveness of chronic illnesses and infectious diseases, and defensive medicine practices. New market entrants and new approaches to healthcare delivery are increasing complexity and competition.

As tumultuous as the current environment is, it is expected to become even more complex over the next several years. Among healthcare executives interviewed for the 2010 Global CEO study, 90 percent expect a high or very high level of complexity over the next five years, but more than 40 percent are unprepared to deal with it.1 This immense complexity confronting the healthcare industry will require smarter, more informed decisions to enable the improved outcomes and better value required by market dynamics, increasing governmental regulation, and today's more demanding consumers.

11.BIBILOGRPHY

We referenced previous work given by the smartInternz and websites we worked in IBM cloud in that we have different applications

APPENDIX

this from google colab

https://colab.research.google.com/drive/1qFp9QR0BXXeEj7DPPUNpEavbR17Ua1kZ?usp=sharing

this is from Jupyter Notebook

http://localhost:8888/notebooks/Health%20Insurance/Health%20Insurances.ipynb