CONNECTED CONSUMER EXPERIENCE USING MACHINE LEARNING

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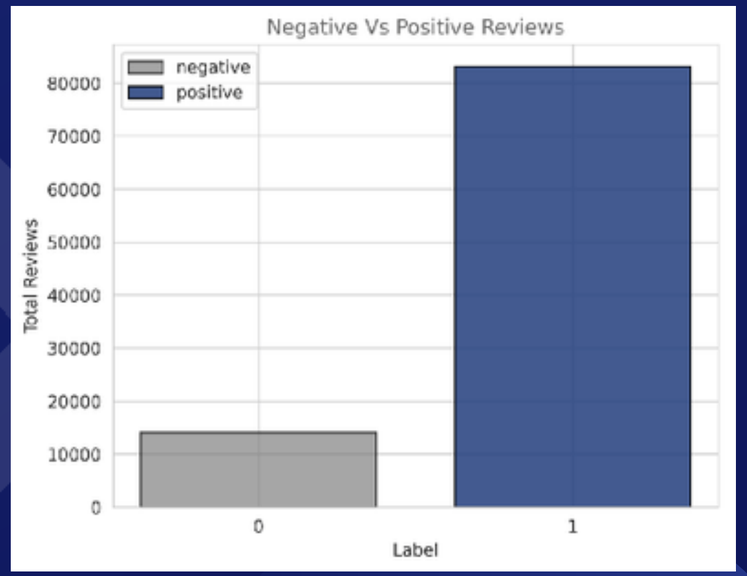
CONTENTS

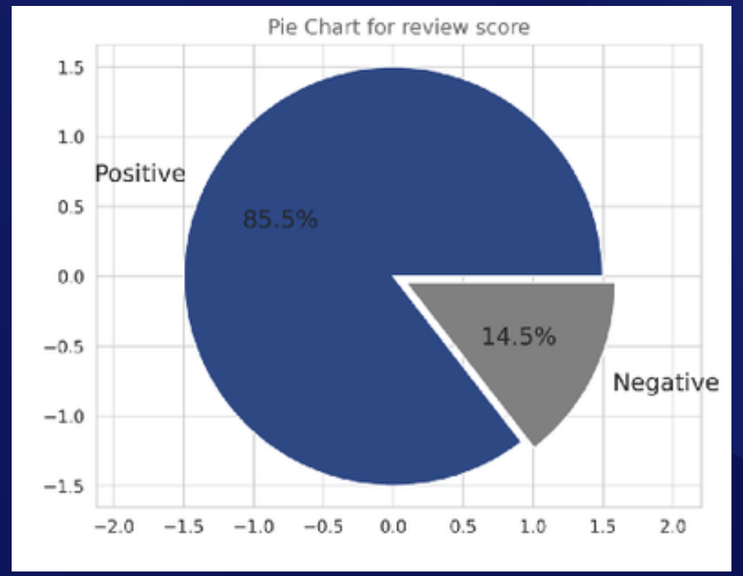
INTRODUCTION

Every piece of information shared by a person as a feedback carries an emotion, sentiment or feeling linked with it. These emotions and feedbacks cannot be neglected. Based on this theme, we tried to build a machine learning model that can analyze the various positive and negative feedbacks given by the customers on a certain product and predict whether the customer is satisfied with it or not.

Customer's experience is one of the most important concern for every industry

However, most of the customers now a day do not show much interest in filling feedback forms.
Another shortcoming of the past approach is that it may or may not have appropriate questionnaire and may be biased on certain parameters.
So our goal is to develop such a model wherein customers can share end express their feedbacks much conveniently without any boundations/limits on them.





OBJECTIVE OF OUR PROJECT

Every piece of information shared by a person as a feedback carries an emotion, sentiment or feeling. These emotions can be positive, negative and neutral.

And this is the major theme/objective of our project to analyze the various positive and negative feedbacks of the customers on a certain product by performing sentiment analysis using our efficiently trained machine learning model.

PROPOSED WORK

Our project focuses on building a machine learning model to predict customer satisfaction regarding a particular service or product using machine learning algorithms namely Logistic Regression and Decision trees.
By building this customer satisfaction model, we'll be able to achieve the following outcomes in a specified range of time-:

- Identify Unhappy Customer & build strategies to prevent their dissatisfaction
- Know the actual needs of customers & incorporate their feedbacks
- Achieve business growth by fulfilling customer needs
- Attract more Customers and improve Business
- Identifying Loyal customers and thereby give them special attention

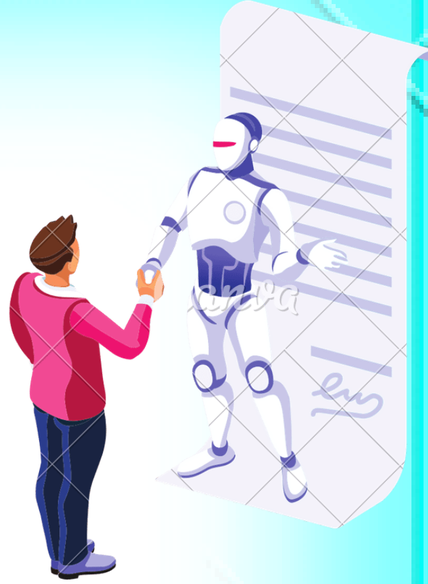
ARCHITECTURE DIAGRAM

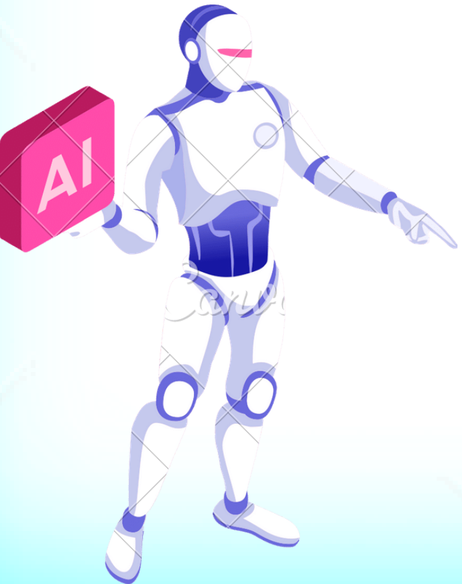
Training of model

Testing of model

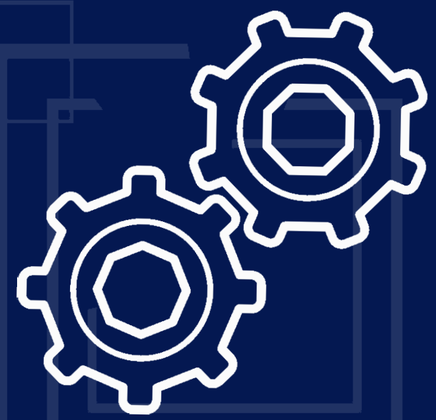
Learning the ML Algorithms

Data collection





Proposed Work



Applying Logistic Regression on our dataset

localhost:8888/notebooks/Numpy.ipynb

jupyter Numpy Last Checkpoint: 10/02/2021 (autosaved) Logout

File Edit View Insert Cell Kernel Widgets Help Not Trusted Python 3 (ipykernel)

Run Code

```
In [1]: import numpy as np

In [2]: import pandas as pd

In [3]: from sklearn import tree

In [4]: import pydotplus

In [5]: from sklearn.model_selection import train_test_split

In [6]: from sklearn.linear_model import LogisticRegression

In [7]: import matplotlib.pyplot as plt

In [8]: import matplotlib.image as pltimg

In [9]: from sklearn.feature_extraction.text import TfidfVectorizer

In [10]: vect=TfidfVectorizer()

In [11]: path='C:\\Users\\Acer\\Dropbox\\My PC (LAPTOP-5VJGRGO2)\\Desktop\\New folder\\Product Reviews.csv'

In [12]: df=pd.read_csv(path)
         print(df)
```

```
   Product Category Product Name                          Customers Reviews  \
0          Lipstick        Lakme  Not Fully Satisfied, Could Have Been Better
1          Lipstick      L'Oreal                Super Happy, One Of The Best
2           Perfume     Tom Ford       Didn't Expected Much But it is useful
3          Lipstick        Lakme                                amm, it's okish
4       Nail Polish        Revlon                            Terrific Purchase
..              ...           ...                                          ...
```

In [13]:
```
X=df['Customers Reviews']
Y=df['Review Analysis']
print(X)
print(Y)
```

```
0     Not Fully Satisfied, Could Have Been Better
1                   Super Happy, One Of The Best
2         Didn't Expected Much But it is useful
3                                amm, it's okish
4                              Terrific Purchase
                         ...
85                         Full Marks On This One
86                                   Just go for it
87                  Super Happy, One Of The Best
88                               Not Recommended
89                                     Satisfied
Name: Customers Reviews, Length: 90, dtype: object
0     Negative
1     Positive
2      Neutral
3      Neutral
4     Positive
        ...
85    Positive
86    Positive
87    Positive
88    Negative
89     Neutral
Name: Review Analysis, Length: 90, dtype: object
```

In [14]:
```
X_train,X_test,Y_train,Y_test=train_test_split(X,Y,test_size=0.1,random_state=1)
```

In [15]:
```
X_train_vec=vect.fit_transform(X_train)
```

	Product Category	Product Name	Customers Reviews	\
0	Lipstick	Lakme	Not Fully Satisfied, Could Have Been Better	
1	Lipstick	L'Oreal	Super Happy, One Of The Best	
2	Perfume	Tom Ford	Didn't Expected Much But it is useful	
3	Lipstick	Lakme	Amm, it's okish	
4	Nail Polish	Revlon	Terrific Purchase	
..	...	...	...	
85	Lipstick	Lakme	Full Marks On This One	
86	Nail Polish	Colorbar	Just go for it	
87	Nail Polish	Revlon	Super Happy, One Of The Best	
88	Perfume	Jo Malone	Not Recommended	
89	Perfume	Tom Ford	Satisfied	

	Review Analysis
0	Negative
1	Positive
2	Neutral
3	Neutral
4	Positive
..	...
85	Positive
86	Positive
87	Positive
88	Negative
89	Neutral

[90 rows x 4 columns]

In [14]:
```
X_train,X_test,Y_train,Y_test=train_test_split(X,Y,test_size=0.1,random_state=1)
```

In [15]:
```
X_train_vec=vect.fit_transform(X_train)
```

In [16]:
```
X_test_vec=vect.transform(X_test)
```

In [17]:
```
lr=LogisticRegression()
```

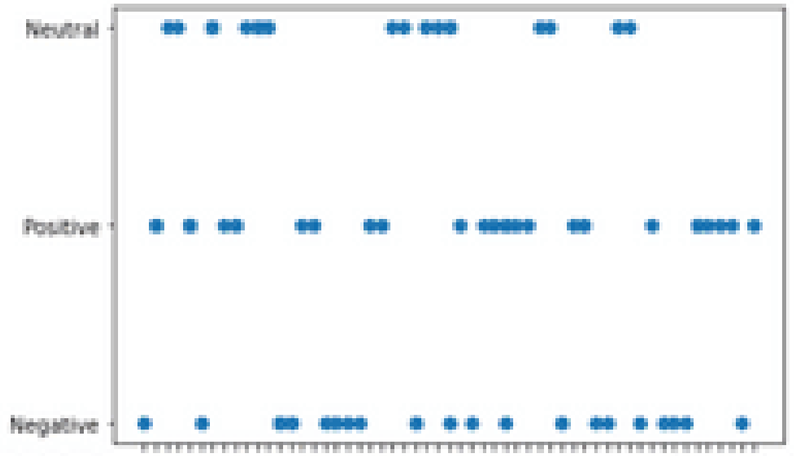
In [18]:
```
lr.fit(X_train_vec,Y_train)
```

Out[18]:
```
LogisticRegression()
```

In [19]:
```
lr_score=lr.score(X_test_vec,Y_test)
print(lr_score)
```

```
0.6666666666666666
```

In [20]:
```
plt.plot(X,Y,'o')
plt.show()
```



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THANK
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