

Univariate_Logistic_Regression

October 22, 2022

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[ ]: #Univariate Logistic Regression can be implemented using libraries such as  
    ↳sklearn and statsmodels, though looking at  
    #the coefficients and the model summary is easier using statsmodels. You can  
    ↳find the optimum values of 0 and 1  
    #using this python code.
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[1]: import pandas as pd  
     import numpy as np
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[2]: dib = pd.read_csv('Diabetes Example Data.csv')
```

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[4]: # Converting Yes to 1 and No to 0  
     dib['Diabetes'] = dib['Diabetes'].map({'Yes': 1, 'No': 0})
```

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[5]: dib.head()
```

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[5]:
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	Blood Sugar Level	Diabetes
0	190	0
1	240	1
2	300	1
3	160	0
4	200	1

```
[6]: # Putting feature variable to X  
     X = dib['Blood Sugar Level']  
  
     # Putting response variable to y  
     y = dib['Diabetes']
```

```
[7]: import statsmodels.api as sm
```

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[8]: logm1 = sm.GLM(y,(sm.add_constant(X)), family = sm.families.Binomial())  
     logm1.fit().summary()
```

```
[8]: <class 'statsmodels.iolib.summary.Summary'>  
     """
```

Generalized Linear Model Regression Results

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Dep. Variable:          Diabetes    No. Observations:      19
Model:                  GLM         Df Residuals:          17
Model Family:          Binomial    Df Model:               1
Link Function:         logit       Scale:                  1.0000
Method:                IRLS       Log-Likelihood:        -4.8955
Date:                  Fri, 12 Jun 2020    Deviance:               9.7910
Time:                  04:23:17    Pearson chi2:           7.98
No. Iterations:        7          Covariance Type:       nonrobust
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=====
              coef      std err          z      P>|z|      [0.025
0.975]
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const          -13.1261     7.567     -1.735     0.083     -27.956
1.704
Blood Sugar Level  0.0644     0.037     1.734     0.083     -0.008
0.137
=====
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''''

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