

TEAM ID: PNT2022TMID52731

## PROJECT NAME: DemandEst - AI powered Food Demand Forecaster

TEAM LEADER

The screenshot displays a YouTube video player with a Jupyter Notebook interface. The video title is "How to build a Simple Linear Regression model with Python" by Chuc Nguyen Van, who has 6.26K subscribers. The video has 1.2K likes and is titled "regression using python".

The Jupyter Notebook code is as follows:

```
In [ ]: 1 #How to build a Simple Linear Regression model with Python
        2 #Implemented by chuc1803@gmail.com, http://bis.net.vn

In [1]: 1 #Import libraries
        2 import pandas as pd
        3 import matplotlib.pyplot as plt
        4 from sklearn import linear_model

In [2]: 1 #Load dataset
        2 data=pd.read_csv('D:/Python_pro/WeightWaist.csv')

In [ ]: 1 #Quick view about the dataset
        2 data
```

The video player shows a progress bar at 2:12 / 17:00. The right sidebar features a search bar with "Regression analysis" and a list of related videos, including "How to do Multiple Linear Regression in Python| Jupyter...", "Linear Regression Practical Implementation In Hindi", "Machine Learning Playlist", "Video 1: Introduction to Simple Linear Regression", "An Introduction to Linear Regression Analysis", and "Linear Regression Algorithm | Linear Regression in Python |...".

Machine Learning Algorithms | Machine Learning Tutorial | Data Science Algorithms | Simplilearn

Machine Learning Lectures | Simplilearn [2022 Updated]

Machine Learning Algorithms | Machine Learning Tutorial | Data Science Algorithms | Simplilearn

Simplilearn 2.54M subscribers

5.1K

Share

Download

28°C Mostly cloudy

Machine learning

Logistic regression

11. Introduction to Machine Learning MIT OpenCourseWare 1.3M views • 5 years ago

Neural Networks From the ground up 19:13 12M views • 5 years ago

ALL MACHINE LEARNING MODELS EXPLAINED 5:01 Learn with Whiteboard 674K views • 2 years ago

Machine Learning Zero to Hero (Google I/O'19) TensorFlow 1.6M views • 3 years ago

Machine Learning Interview Questions And Answers | Data... Simplilearn 140K views • 4 years ago

Machine Learning Algorithms | Machine Learning Tutorial |... edureka!

classification in python

Classification Titanic- Decision Trees, RandomForest, Gradient Boosting... Last checkpoint a day ago (unsaved changes)

Drop rows with missing values

```
In [10]: df = df.dropna()
In [10]: df.head()
Out[10]:
```

	PassengerId	Survived	Pclass	Sex	Age	Ship	Parth	Fare	Embarked
0	1	0	3	male	22.0	1	0	7.2500	S
1	2	1	1	female	38.0	1	0	71.2833	C
2	3	1	3	female	26.0	0	0	7.9200	S
3	4	1	1	female	35.0	1	0	53.1000	S
4	5	0	3	male	35.0	0	0	5.0000	S

Machine Learning and Data Science Nuggets

How to Build all Classifiers in Python - Random Forest, Decision Tree, Naive Bayes, SVM, LR, GB...

Kindson The Tech Pro

769

Share

Download

32°C Cloudy

SAVING LIVES one fundraiser at a time

Save Smriti Ad - impactguru.com Donate now

From your search

Statistical classification

RANDOM FOREST ALGORITHM - RANDOM FOREST EXPLAINED 45:35 Simplilearn 280K views • 4 years ago

Using Random Forest classifier 32:17 DigitalSreeni 28K views • 3 years ago

Decision Trees in Python... 1:06:24 StatQuest with Josh Starmer 135K views • 2 years ago

Text Classification Using Naive Bayes | Naive Bayes Algorithm... Simplilearn

YouTube **classification in python**

```

In [1]: # Loading the library with the iris dataset
from sklearn.datasets import load_iris
# Loading scikit's random forest classifier library
from sklearn.ensemble import RandomForestClassifier
# Loading pandas
import pandas as pd
# Loading numpy
import numpy as np
# Setting random seed
np.random.seed(0)

```

Machine Learning Lectures | Simplilearn [2022 Updated]  
**Random Forest Algorithm - Random Forest Explained | Random Forest in Machine Learning | Simplilearn**

William Stallings - .chm  
 2.9/12.4 MB, Paused

32°C Cloudy

ENG IN 14:59 10-11-2022

All Statistical classification Machine learning

- Random Forests Part 1...  
Building, using and evaluating, clearly explained!!  
9:54  
817K views · 4 years ago
- StatQuest: Random Forests Part 1 - Building, Using and...  
StatQuest with Josh Starmer  
817K views · 4 years ago
- NAIVE BAYES CLASSIFIER  
Simplilearn  
43:45  
153K views · 4 years ago
- Naive Bayes Classifier | Naive Bayes Algorithm | Naive Bayes...  
Simplilearn  
153K views · 4 years ago
- DATA SCIENCE INTERVIEW QUESTIONS  
Simplilearn  
47:22  
205K views · 4 years ago
- Data Science Interview Questions | Data Science...  
Simplilearn  
205K views · 4 years ago
- Random Forest Explained | Random Forest Python |...  
edureka!  
48:17  
28K views · Streamed 2 years ago
- Random Forest In R | Random Forest Algorithm | Random...  
Simplilearn  
27:01  
35K views · 4 years ago

## TEAM MEMBER 1

Download file | iLove! x (4) Classification x WhatsApp x IBM x Get started with mac x Learn classification al x New Tab x

youtube.com/watch?v=pXdum128xww

classification algorithms using python

edureka! www.edureka.co/machine-learning-certification-training

# K-Nearest Neighbors

It is a lazy learning algorithm that stores all instances corresponding to training data in n-dimensional space. It is a lazy learning algorithm as it does not focus on constructing a general internal model, instead, it works on storing instances of training data.

8:46 / 33:23

Machine Learning Algorithms in Python (With Demo) | Edureka  
**Classification in Machine Learning | Machine Learning Tutorial | Python Training | Edureka**

edureka! 3.59M subscribers

1.5K Share Download

From your search Statistical classification

- What is Classification  
TECH DOSE  
7:51  
41K views · 3 years ago
- What is classification in Machine Learning | Binary and...  
TECH DOSE  
41K views · 3 years ago
- MACHINE LEARNING ALGORITHMS  
Simplilearn  
1:11:05  
308K views · 4 years ago
- Machine Learning Algorithms | Machine Learning Tutorial |...  
Simplilearn  
308K views · 4 years ago
- Mix - edureka!  
More from this channel for you
- CLASSIFICATION IN MACHINE LEARNING (v1)  
edureka!  
96  
MACHINE LEARNING FULL COURSE IN 7 HOURS
- Machine Learning Tutorial Videos | Simplilearn [2022...  
Simplilearn  
Updated yesterday
- Mary Did You Know? (Official Music Video) | One Voice...  
One Voice Children's Choir  
4.6M views · 1 year ago
- Python Data Science Project  
Data Professor  
17

28°C Mostly cloudy

ENG IN 12:04 10-11-2022

Download file | il... x (4) regression usi... x WhatsApp x IBM x Machine learning x (4) Machine l... x (4) Unsupervised x Learn classificati... x +

youtube.com/watch?v=3fsyZoheRdg&t=3s

Gmail YouTube Maps News Translate National Security A... The Black Chamber... WELCOME TO PERF... Java Graphics in Ap... To Change The Fon... SQL Commands: D... Departmental Store...

YouTube

Search

Machine Learning Basics: Supervised v Unsupervised

IBM IBM Technology 334K subscribers

3K views 1 month ago

28°C Mostly cloudy

Machine Learning vs Deep Learning

Machine Learning for Everybody

Week 1 - Lecture 1 - Introduction to Machine...

Stanford CS229: Machine Learning Course, Lecture 1 - ...

Tutorial 1- Anaconda Installation and Python Basics

Support Vector Machine (SVM) Basic Intuition- Part 1| Machin...

Download file | ilove... x (4) regression using... x WhatsApp x IBM x Machine learning o... x (4) Unsupervised x Learn classification al... x +

youtube.com/watch?v=D6gtZrsYi6c

Gmail YouTube Maps News Translate National Security A... The Black Chamber... WELCOME TO PERF... Java Graphics in Ap... To Change The Fon... SQL Commands: D... Departmental Store...

YouTube

unsupervised learning machine learning

Working: Hierarchical Clustering

Step 01 Assign each item to its own cluster, such that if you have N number of items, you now have N number of clusters.

Step 02 Find the closest (most similar) pair of clusters and merge them into a single cluster. Now you have one cluster less.

Step 03 Compute distances (similarities) between the new cluster and every old cluster.

Step 04 Repeat steps two and three until all items are clustered into a single cluster of size N.

Artificial Intelligence Tutorial Videos [2022 Updated]

Unsupervised Learning | Unsupervised Learning Algorithms | Machine Learning Tutorial | Simplilearn

Simplilearn 2.54M subscribers

305

Cluster analysis

K-Means Clustering...

Unsupervised Learning: Crash Course AI #6

K-Means Clustering

K MEANS CLUSTERING ALGORITHM

Lecture 1.3 - Unsupervised Learning - [ Machine Learning...

K Means Clustering Algorithm | K Means Example in Python I...



Download file | iLove... (4) regression using p... WhatsApp IBM Machine learning over... (4) Machine Learn... Learn classification al... +

youtube.com/watch?v=EHUEPCzJM

unsupervised learning machine learning

SSE = Sum of Squared Errors

$SSE_1 = \sum_{i=0}^n dist(x_i - c_1)^2$

$SSE_2 = \sum_{i=0}^m dist(x_i - c_2)^2$

$SSE = SSE_1 + SSE_2 + \dots + SSE_k$

Data Science Full Course For Beginners | Python Data Science Tutorial | Data Science With Python

Machine Learning Tutorial Python - 13: K Means Clustering Algorithm

codebasics 697K subscribers

Subscribe

8.5K

Share

Download

Cluster analysis

Statistics

Listenabl

Become a Certified Data Scientist in 3 Months

Learn Data Science in 3 Months from IIT Experts. 100% Job Placement Support & more

Ad - GUVI - IIT-M Incubated

Learn more

K-MEANS CLUSTERING FROM SCRATCH

11K views · 3 months ago

K-Means Clustering

Mix - codebasics

More from this channel for you

Shakira - Try Everything | One

28°C Mostly cloudy

12:14 10-11-2022

Download file | iLove... (4) regression using p... WhatsApp IBM Machine learning over... (4) Linear Regres... Learn classification al... +

youtube.com/watch?v=NUXdtN1W1FE

regression using python

```
In [4]: # Importing the Libraries
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
import seaborn as sns
%matplotlib inline

In [ ]: # Importing the dataset and Extracting the Independent and Dependent variables
companies = pd.read_csv('C:/simplilearn/1000_companies.csv')
X = companies.iloc[:, :-1].values
y = companies.iloc[:, 4].values

companies.head()
```

Machine Learning Lectures | Simplilearn [2022 Updated]

Linear Regression Analysis | Linear Regression in Python | Machine Learning Algorithms | Simplilearn

Simplilearn 2.54M subscribers

Subscribed

3.9K

Share

Download

Logistic Regression | Logistic Regression in Python | Machin...

114K views · 4 years ago

Video 1: Introduction to Simple Linear Regression

1.1M views · 7 years ago

Machine Learning Tutorial Python - 3: Linear Regression...

399K views · 4 years ago

Tutorial 26- Linear Regression Indepth Maths Intuition- Data...

245K views · 2 years ago

Linear Regression : Single Variable

644K views · 4 years ago

Linear Regression Explained in Hindi II Machine Learning...

5 Minutes Engineering

28°C Mostly cloudy

12:22 10-11-2022

## TEAM MEMBER 2

```
jupyter Simplilearn_2018-03_DecisionTree Last Checkpoint: 11 hours ago (unsaved changes)
File Edit View Insert Cell Kernel Help Trusted Python 3
from sklearn.model_selection import train_test_split
from sklearn.tree import DecisionTreeClassifier
from sklearn.metrics import accuracy_score
from sklearn import tree

#Loading data file
fullFileName = 'C:/Users/richard/Documents/DocsBusiness/_Simplilearn/marketing_videos/2018_03-14_DecisionTree/
balance_data=pd.read_csv(fullFileName,sep= ',', header= 0)

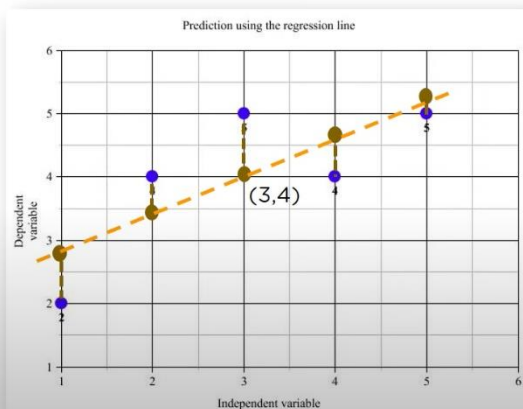
In [4]: print("Dataset Length:: ", len(balance_data) )
        print("Dataset Shape:: ", balance_data.shape )

        Dataset Length:: 1000
        Dataset Shape:: (1000, 5)

In [ ]: print("Dataset:: ")
        balance_data.head()
```

## Intuition behind the Regression line

Lets find out the predicted values of Y for corresponding values of X using the linear equation where  $m=0.6$  and  $c=2.2$



$Y_{pred}$

$$Y=0.6 * 1+2.2=2.8$$

$$Y=0.6 * 2+2.2=3.4$$

$$Y=0.6 * 3+2.2=4$$

$$Y=0.6 * 4+2.2=4.6$$

$$Y=0.6 * 5+2.2=5.2$$

Here the blue points represent the **actual** Y values and the brown points represent the **predicted** Y values. The distance between the actual and predicted values are known as **residuals or errors**. The best fit line should have the least sum of squares of these errors also known as **e square**.



## TEAM MEMBER 3

Machine Learning Tutorial Python - 13: K Means Clustering Algorithm

jupyter Untitled Last Checkpoint: an hour ago (unsaved changes)

File Edit View Insert Cell Kernel Widgets Help Trusted Python 3

```
km = KMeans(n_clusters=3)

Out[5]: KMeans(algorithm='auto', copy_x=True, init='k-means++', max_iter=300,
              n_clusters=3, n_init=10, n_jobs=1, precompute_distances='auto',
              random_state=None, tol=0.0001, verbose=0)

In [6]: y_predicted = km.fit_predict(df[['Age', 'Income($)']])
        y_predicted

Out[6]: array([2, 2, 0, 0, 1, 1, 1, 1, 1, 1, 1, 0, 0, 0, 0, 0, 0, 2, 2, 0])

In [7]: df['cluster'] = y_predicted
        df.head()

Out[7]:
```

	Name	Age	Income(\$)	cluster
0	Rob	27	70000	2
1	Michael	29	90000	2
2	Mohan	29	61000	0
3	Ismail	28	60000	0
4	Kory	42	150000	1

11:47 / 25:14 • sklearn cluster KMeans model creation and training

Unsupervised Learning | Unsupervised Learning Algorithms | Machine Learning Tutorial | Simplilearn

jupyter Untitled2 (unsaved changes)

File Edit View Insert Cell Kernel Widgets Help Trusted Python 3

```
In [ ]: import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
sns.set()
%matplotlib inline
import warnings
warnings.filterwarnings('ignore')
plt.rcParams
```

21:19 / 28:35



## The right Machine Learning solution?



### Classification

Used when the output is categorical like 'YES' or 'NO'

#### Algorithms used

- Decision Tree
- Naïve Bayes
- Random Forest
- Logistic regression
- KNN



### Clustering

Used when the data needs to be organized to find patterns in the case of 'product recommendation'



### Regression

Used when a value needs to be predicted like the 'stock prices'

#### Algorithms used

- Linear Regression

## Training

### Supervised Learning

Supervised Learning techniques need external supervision to train models



### Unsupervised Learning

Unsupervised Learning techniques do not need any supervision to train models



### Reinforcement Learning

Reinforcement Learning techniques do not need any supervision to train models











