

Training Program on Machine Learning (25th May, 2022 and 24th June, 2022)

Machine Learning finds applications in various domains, including image and speech recognition, natural language processing, recommendation systems, autonomous vehicles, and medical diagnosis. The success of machine learning often relies on the availability of large and relevant datasets, as well as the design of effective algorithms and models. A 30 Days Machine Learning Masterclass was organized for the students between 25th May, 2022 and 24th June, 2022. Dr. Souvik Ganguli from the Department of Electrical and Instrumentation Engineering, Thapar Institute of Engineering and Technology, Patiala was the coordinator for the program. The link for the above program is shared for reference:

<https://www.youtube.com/watch?v=rDHJVFJj7b0&list=PL6vYCEz6mwnXr4rVfziJILY9A2j7o4PHz&index=1>

Learn - Practice - Build 25+ Projects

30 Days Machine Learning Master Class - Webinar

Supervised - Unsupervised - Reinforcement

Supervised Learning

Age	Salary	Status
18	82000	0
29	80000	0
47	25000	1
45	26000	1
46	28000	1
48	29000	1
45	22000	1
47	49000	1
48	41000	1
45	22000	1
46	23000	1
47	20000	1
49	28000	1
47	30000	1
29	43000	0
47	43000	0

```
from google.colab import files
uploaded = files.upload()

DigitalAd_dataset.csv
DigitalAd_dataset.csv(text/csv) - 4893 bytes, last modified: 8/10/2022 - 100% done
Saving DigitalAd_dataset.csv to DigitalAd_dataset.csv

Load Dataset

dataset = pd.read_csv('DigitalAd_dataset.csv')
print(dataset)
```

Non-Linear SVM

Hyperplane It is a decision plane which separates between a set of objects

Support Vectors Data point close to the Hyperplane, which defines the separating line better by calculating margins

Margin

SVM Kernel

Other Tuning Parameters

convolutional neural network

```
# WARNING! All changes made in this file will be lost!

from PyQt5 import QtCore, QtGui, QtWidgets
import numpy as np
from keras.preprocessing import image
from keras.models import Sequential
from keras.layers import Dense
from keras.models import model_from_json
from keras.models import Sequential
#initialize nn
from keras.layers import Conv2D
from keras.layers import MaxPooling2D
from keras.layers import Flatten
#convert pooling features space to large feature vector for fully
#connected layer
from keras.preprocessing.image import ImageDataGenerator
from keras.layers import BatchNormalization
from keras.layers import Dropout

import os
```

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```
self.label.setText(self.translate("mainwindow", "Recognized Class",
self.Training, #MainWindow, "Training"))

def loadImage(self,
fileName, #
if fileName: #
print(fileName)
self.fileName = fileName
self.image = image.load_img(fileName)
self.image = image.img_to_array(self.image)

def classifyFunction(self):
json_file = open("model.json", "r")
loaded_model_json = json_file.read()
json_file.close()
loaded_model = model_from_json(loaded_model_json)
# load weights into new model
loaded_model.load_weights("model.h5")
# loaded_model.load_weights("ResNet50-ft-10.model")
```

