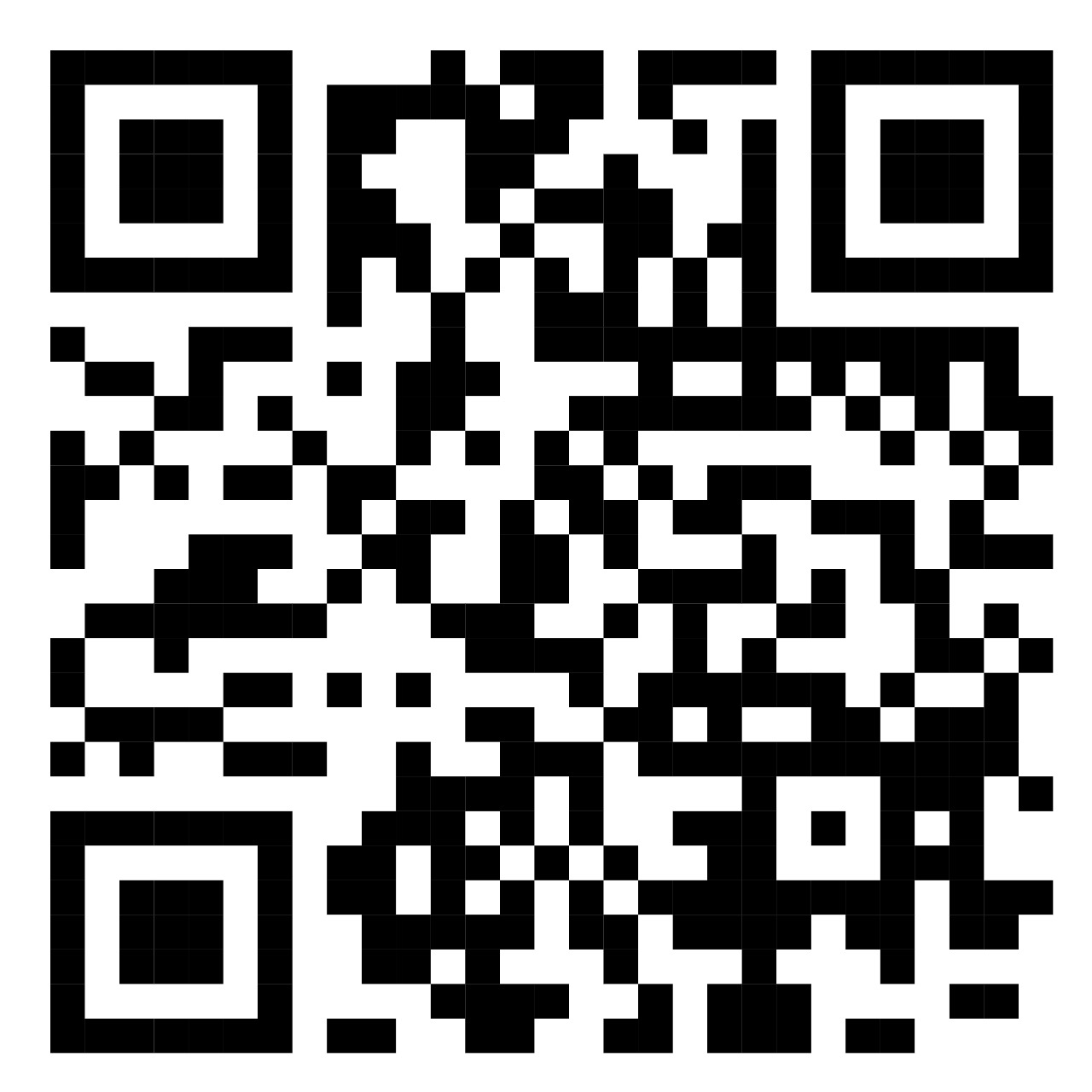
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**DAY 1:12-02-2024**

IDE:Integrated

Numpy-python library for numerical computing it supports arrays,matrices,scientific computing data analysis machine learning

**DAY-3:14-02-2024**

Module-3:Machine Learning-data analysis

Machine learning -3 types

Imp are 2 steps

1.training data

2.Testing data

Types of Machine learning

1.Supervised machine learning

2.Unsupervised machine learning

3.Semi Supervised machine learning

Frequently used words in ML are Label,Features

Labled data -Supervised learning

Unlabled data-Unsupervised learning

Combination of Labled & unlabled–semi

Teachable Machine(website)-image project

->name classes(yes or no and more no.of class)

->upload images from kaggle dataset

->click on training Model

->for code click on export model if you to save then click on upload model it will be saved in teachable machine cloud and generate a click ,copy the link and paste in new tab you will see the project working

->to test the project without uploading on webcam or add file from your pc

->it will show the result according to class Yes or No

Machine learning for kids(website)->click on “try it now”(without registring you can use it)->free version available for 3 to 4 hrs

->give name

->select type

->

Algorithm

1.cnl-specific for image project

2.rnl-text project

CNN(Convolution Neural Network)

1.Input layer-to extract images

2.hidden layer

3.output layer-output depends on probability score

Hidden layer

1Convolution layer-extract features from the input

2.Activation layer-applies activation function for the output by calculating weighted sum& bias

3.Pooling layer-reduces memory,size &fast computation

i)Max

ii)Avg

iii)Min

Activation Function

->It decides whether the neuron is activated or not by calculating the weighted sum and bias

->It’s purpose is element wise operation

1.Sigmoid function

2.Tanh

3.RELU

4.Softmax

ML

1.Classification-cnn

2.Regression -linear,logical

Linear Regression

->Also a type of ML algorithm

->supervised ML algorithm

->learn from labeled dataset and maps the data points to the most optimised linear functions

->these points can be used for prediction on new datasets

Dependent&Independent variable

In Chemical reaction

-Mass of product increases with time

Mass-dependent-x

Time-Independent-y

Graph for above is Hyper plane in maths

X’-mean=5+7+12+16+20/5(ind)

Y’-mean=40+120+180+210+240/5(dep)

Find difference between each x point and x-mean(X-x’)

Find difference between each y point and y-mean(y-y’)

Find sum of squares of (x-x’)^2 sum(x-x’)^2

Find product of (x-x’) and (y-y’)

a=y’-bx’

b=Sxy/Sxx

=sigma(xi-x’)(yi-y’)/sigma(xi-x’)^2

Logistic Regression

->Used for Binary Classification

->Suervised learning

P>0.5,its a goal-classA(y=1)

p=<0.5,its a miss-cclassB(y=0)

PCA-Principle Component Analysis

Converts Sensible data into hideable data

SVM-Support Vector Machine