

PR2



* Merge Sort
Divide & Conquer
Time complexity: $O(n \log n)$

6 4 2 1 9 8 3 5

6 | 4 | 2 | 1

9 | 8 | 3 | 5

6 | 4 2 | 1

9 | 8 3 | 5

[6 | 4] [2 | 1]

[9 | 8] [3 | 5]

Conquer / Merge

[6 | 4]

[2 | 1]

[9 | 8]

[3 | 5]

4 | 6

1 | 2

8 | 9

3 | 5

[1 | 2 | 4 | 6]

[3 | 5 | 8 | 9]

[1 | 2 | 4 | 6 | 3 | 5 | 8 | 9]

1 2 3 4 5 6 8 9

PR2



Bubble Sort

10 | 9 | 11 | 6 | 15 | 2

9 10 11 6 15 2
Bubble Sort

9 10 11 6 15 2
Bubble Sort

9 10 6 11 15 2
Bubble Sort

9 10 6 11 2 15
Bubble Sort

9 10 6 11 2
Bubble Sort

Time complexity $O(n^2)$

Space complexity $O(1)$

Stable

PR2



Open MP

if stands for open multi processing
it is a platform shared memory multiprocessor programming in C, C++ & Fortran

on many platform installed
architecture & OS including
getaway, AIX, PowerPC, etc.

Open MP is portable & scalable
model with simple & flexible interface for developing parallel applications

or Parallel MPI

① Basics: for calculation & communication

Sequential Algorithm

Divided

Parallel Algorithm

Divides a problem into smaller parts & solve them concurrently in any order

1. Similar algorithms
It is an algorithm 1500 - 1800
combining the old & the new
of some use

2. One use for many patterns
of elements involving minimum
of elements & work by using half
the number of threads
of elements in the tabular

3. Parallel Algorithm algorithm
Such as the parallel merge
sort, data known of the
same elements

Parallel Algorithm
1. Big Data

- 2. Database
- 3. Database

1. GPU
Computer in the device
+ 150 Billion computing power

2. GPU Program Translators
designed by NVIDIA, Intel

It allow you to use GPUs for
Accelerated general purpose
processing

on Apple's new generation
processors can GPU

Apple
1. 1 more processor

- 2. DL
- 3. Medical imaging
- 4. Oil & gas

* Vectors

a Vectors is a one-dimensional
array of data elements that
is ordered

A Vector can be represent by
1D vector such as

$(v_1, v_2, v_3, \dots, v_n)$

A vector processing is a parallel processing
that is designed to process multiple data



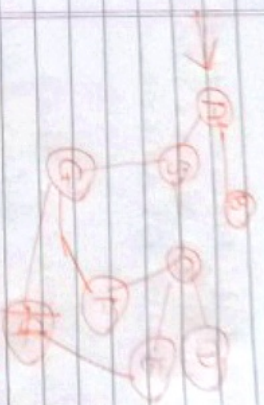
Matrix multiplication
is a binary operation that
produces a matrix from two
matrices.

It is widely used in engineering, often
in the form of a graph. If it is
possible, it is possible to find a matrix
of values of the same number
is equal to the same number
of the same matrix.

Matrix
is an n-dimensional array of
elements or set of numbers
arranged in rows and columns
to form a matrix. A matrix
is denoted by M .

PR 1

BF5

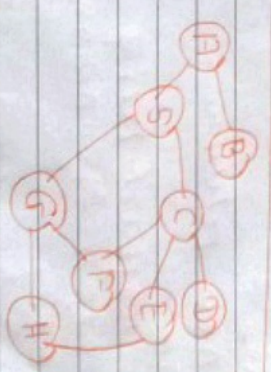


Queue of A, B, C, D, E, F, G, H

[A|B|C|D|E|F|G|H]

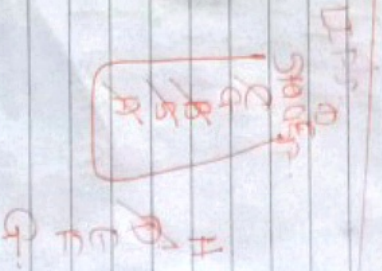
Time complexity $O(V+E)$
Space complexity $O(V+E)$

DFS



Queue of A, B, C, D, E, F, G, H

$O(V+E)$



DL PPT

Linear Regression

is a supervised ML program that uses a known data value to predict the value of unknown data

- it is a statistical model that estimate the linear relation ship b/w a given Response &

is a data analysis technique that predicts the value of unknown data by an equation

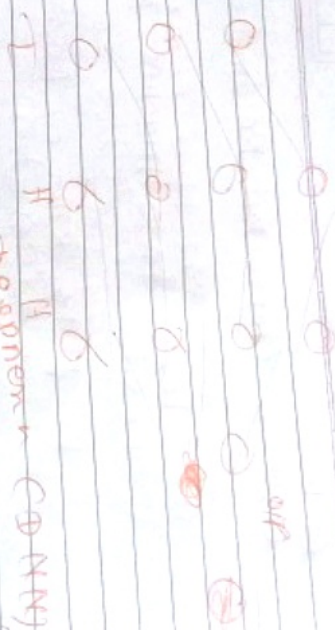
DL PPT

Dependent variable

ML algo it uses target of output & edge to predict dependent variable

inspired by biological neural network

Desired to minimize prediction error



DL PR (2)

DL Classifier

The process of categorizing data into identifiable groups or pattern.

Multi-class classification

is a classification task where the model has to predict the value of a variable within the set of more discrete possibilities.

ex: a multi-class neural network can identify if a dog is a beagle, poodle, or bulldog.

dog is a beagle, poodle, bulldog.

CCB optical character Recognition

is a technology that converts image of text into machine readable text.

is 199 Kbytes loop

DL PR 3

① CNN used for image recognition & processing task.

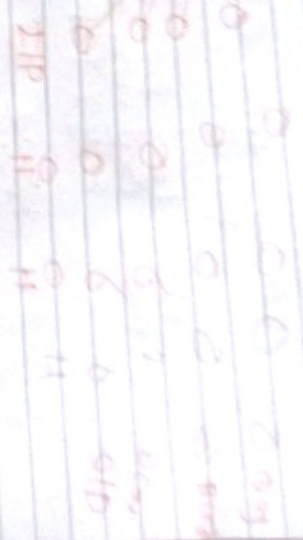
Multilayer perceptron Convolutional layer, Pooling layer & fully connected layer.

④ Convolutional layer

First layer - main building layer of CNN. Center set of filter or kernel

The filter or kernel then go through the input image to produce the output value to produce the correct output.

1 (input)



RNN

Pyran - Descg. - these are the 8,000

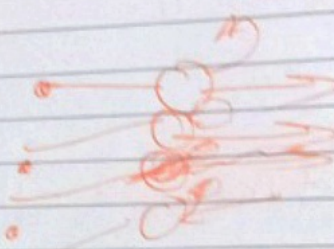
Name

- ① Black spot
- ② Rust
- ③ Black Rot
- ④ Soft rot
- ⑤ Bacterial canker
- ⑥ Potato virus
- ⑦ Tobacco yellow leaf

+ RNN
it is type of AI mem
N/w

that len bus peeps expenise
make prediction based on
prev TIP

it have to convert sequen
data tip into sequen
data all



TIP

Done to all
Done to all
Done to all
@ nautis