

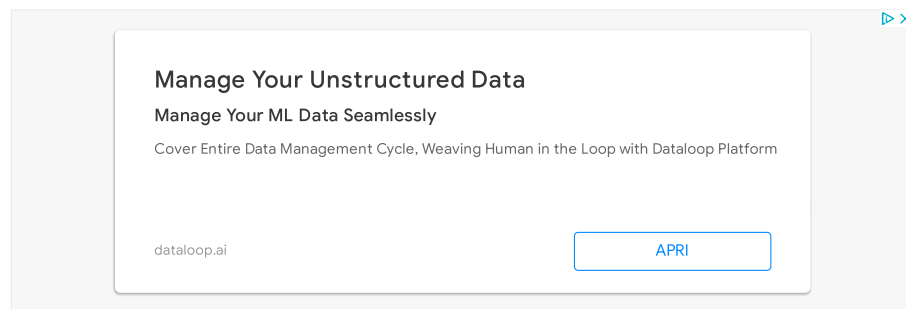


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1. AI AND MACHINE LEARNING VTU LAB | READ NOW

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MACHINE LEARNING VTU LAB

1. Implement and demonstrate the FIND-S algorithm for finding the most specific hypothesis based on a given set of training data samples. Read the training data from a . CSV file.

Program Code – lab1.py

```
1. import csv
2. hypo = ['%', '%', '%', '%', '%', '%'];
3.
4. with open('trainingdata.csv') as csv_file:
5.     readcsv = csv.reader(csv_file, delimiter=',')
6.     print(readcsv)
7.
8.     data = []
9.     print("\nThe given training examples are:")
10.    for row in readcsv:
11.        print(row)
12.        if row[len(row)-1].upper() == "YES":
13.            data.append(row)
14.
15.    print("\nThe positive examples are:");
16.    for x in data:
17.        print(x);
18.    print("\n");
19.
20.    TotalExamples = len(data);
21.    i=0;
22.    j=0;
23.    k=0;
24.    print("The steps of the Find-s algorithm are :\n",hypo);
25.    list = [];
26.    p=0;
27.    d=len(data[p])-1;
28.    for j in range(d):
29.        list.append(data[i][j]);
30.    hypo=list;
```

```

31. i=1;
32. for i in range(TotalExamples):
33.     for k in range(d):
34.         if hypo[k]!=data[i][k]:
35.             hypo[k]='?';
36.             k=k+1;
37.         else:
38.             hypo[k];
39.     print(hypo);
40. i=i+1;
41.
42. print("\nThe maximally specific Find-s hypothesis for the given training examples is :")
43. list=[];
44. for i in range(d):
45.     list.append(hypo[i]);
46. print(list);

```

MACHINE LEARNING Program Execution – LAB1.ipynb

Jupyter Notebook program execution.

```

1. import csv
2. hypo = ['%', '%', '%', '%', '%', '%'];
3.
4. with open('trainingdata.csv') as csv_file:
5.     readcsv = csv.reader(csv_file, delimiter=',')
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7.
8.     data = []
9.     print("\nThe given training examples are:")
10.    for row in readcsv:
11.        print(row)
12.        if row[len(row)-1].upper() == "YES":
13.            data.append(row)

```

The given training examples are:

['sky', 'airTemp', 'humidity', 'wind', 'water', 'forecast', 'enjoySport']

['Sunny', 'Warm', 'Normal', 'Strong', 'Warm', 'Same', 'Yes']

['Sunny', 'Warm', 'High', 'Strong', 'Warm', 'Same', 'Yes']

['Rainy', 'Cold', 'High', 'Strong', 'Warm', 'Change', 'No']

['Sunny', 'Warm', 'High', 'Strong', 'Cool', 'Change', 'Yes']

```

1. print("\nThe positive examples are:");
2. for x in data:
3.     print(x);
4. print("\n");

```

The positive examples are:

['Sunny', 'Warm', 'Normal', 'Strong', 'Warm', 'Same', 'Yes']

['Sunny', 'Warm', 'High', 'Strong', 'Warm', 'Same', 'Yes']

['Sunny', 'Warm', 'High', 'Strong', 'Cool', 'Change', 'Yes']

```

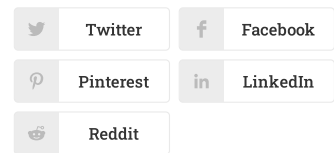
1. TotalExamples = len(data);
2. i=0;
3. j=0;
4. k=0;
5. print("The steps of the Find-s algorithm are :\n",hypo);
6. list = [];
7. p=0;
8. d=len(data[p])-1;
9. for j in range(d):
10.    list.append(data[i][j]);
11. hypo=list;
12. i=1;
13. for i in range(TotalExamples):
14.     for k in range(d):
15.         if hypo[k]!=data[i][k]:
16.             hypo[k]='?';
17.             k=k+1;
18.     else:
19.         hypo[k];

```

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```
20.     print(hypo);
21.     i=i+1;
```

The steps of the Find-s algorithm are :

```
['%', '%', '%', '%', '%', '%']
```

['Sunny', 'Warm', 'Normal', 'Strong', 'Warm', 'Same']

['Sunny', 'Warm', '?', 'Strong', 'Warm', 'Same']

['Sunny', 'Warm', '?', 'Strong', '?', '?']

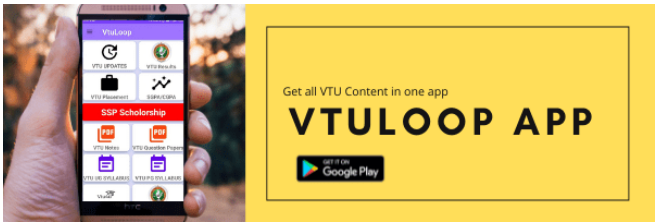
```
1. print("\nThe maximally specific Find-s hypothesis for the given training examples is :")
2. list=[];
3. for i in range(d):
4.     list.append(hypo[i]);
5. print(list);
```

The maximally specific Find-s hypothesis for the given training examples is :

['Sunny', 'Warm', '?', 'Strong', '?', '?']

[Download the Dataset](#)

Dataset



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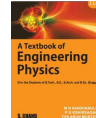


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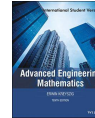
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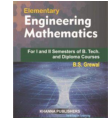
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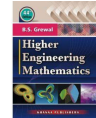
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