

Developing a Flight Delay Prediction Model using Machine Learning

TEAM LEADER : SANTHOSH T

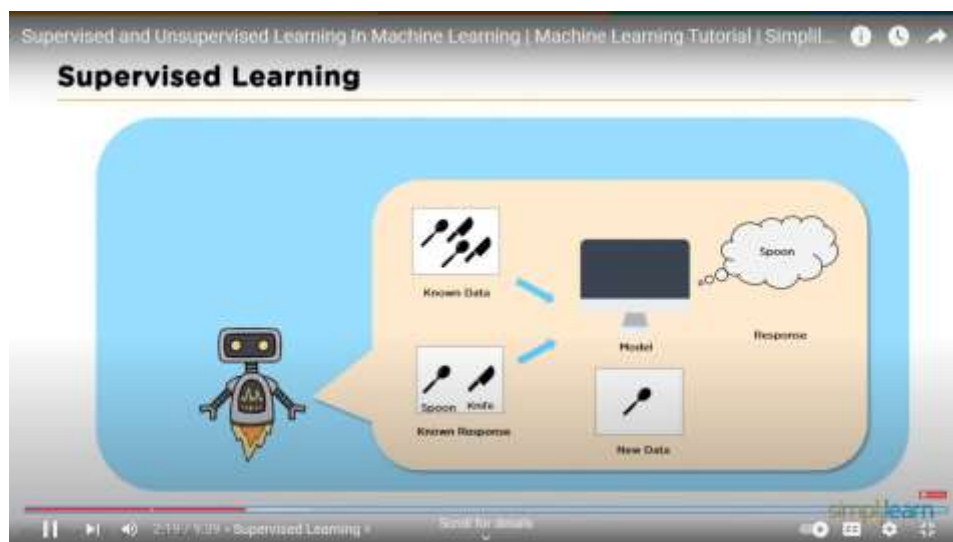
TEAM MEMBER : 1. PRADEEP SURYA R

2. PALANISAMY V

3. NISHANTH M L

Prior Knowledge:

Supervised and unsupervised learning:



Regression Classification and Clustering:

A screenshot of a YouTube video player. The video is titled "Machine Learning in R - Classification, Regression and Clustering Problems" and is from the channel "DataCamp". The video is at 0:23 / 6:30. The main content is a slide titled "Common ML Problems" with a bulleted list: "Classification", "Regression", and "Clustering". A presenter is visible on the right side of the slide. The video player interface includes a search bar, a sign-in button, and a list of recommended videos at the bottom.

Machine Learning in R - Classification, Regression and Clustering Problems

65,674 views · Dec 5, 2015 · 582 likes · Dislike · Share · Save · ...

Recommended videos:

- Data Analysis: Clustering and Classification (Lec. 1, part 1) - 26:59
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A screenshot of a YouTube video player. The video is titled "Machine Learning in R - Classification, Regression and Clustering Problems" and is from the channel "DataCamp". The video is at 6:23 / 6:30. The main content is a slide titled "k-Means" with the text "Cluster data in k clusters!". The slide shows two scatter plots: the left one has black data points, and the right one has red, green, and blue data points. A presenter is visible on the right side of the slide. The video player interface includes a search bar, a sign-in button, and a list of recommended videos at the bottom.

Machine Learning in R - Classification, Regression and Clustering Problems

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Flask:

Python Flask Tutorial For Beginners | Flask Web Development Tutorial | Python Training | Edureka

```
from flask import Flask
app = Flask(__name__)


@app.route('/hello/<name>')
def hello_name(name):
    return "Hello %s!" % name

if __name__ == '__main__':
    app.run(debug = True)
```

WARNING: Do not use the development server in a production environment.
Use a production WSGI server instead.
• Debug mode: off
• Running on <http://127.0.0.1:5000/> (Press CTRL+C to quit)
127.0.0.1 - - [14/Dec/2019 11:44:47] "GET / HTTP/1.1" 200 -

Python Flask Tutorial For Beginners | Flask Web Development Tutorial | Python Training | Edureka

Flask – Redirect & Errors

 Standardized status codes

Prototype \Rightarrow Flask.abort(code)

Sl.no	Status Code
1	HTTP_300_MULTIPLE_CHOICES
2	HTTP_301_MOVED_PERMANENTLY
3	HTTP_302_FOUND
4	HTTP_303_SEE_OTHER
5	HTTP_304_NOT_MODIFIED
6	HTTP_305_USE_PROXY
7	HTTP_306_RESERVED

Sl.no	Code	Description
1	400	Bad Request
2	401	Unauthenticated
3	403	Forbidden
4	404	Not Found
5	406	Not Acceptable
6	415	Unsupported Media Type
7	429	Too Many Requests

Python Certification Training

Entropy in Decision Tree Intuition:

Tutorial 37: Entropy In Decision Tree Intuition

Decision Tree information gain:

Tutorial 38- Decision Tree Information Gain

DECISION TREE INFORMATION GAIN

ENTROPY

② Information Gain

$$\text{Gain}(S, A) = H(S) - \sum_{v \in \text{VAL}(A)} \frac{|S_v|}{|S|} H(S_v)$$

$$H(f_1) = 0.94$$

$$H(f_2) = 0.91$$

$$H(f_3) = 1$$

$$\text{Gain}(S, f_1) = H(S) - \frac{8}{14} H(f_2) - \frac{6}{14} H(f_3)$$

$$= 0.91 - \frac{8}{14} \times 0.91 - \frac{6}{14} \times 1$$

$$= 0.049$$

0.06 / 12:39

Tutorial 38- Decision Tree Information Gain

DECISION TREE INFORMATION GAIN

ENTROPY

0 to 1 bit

② Information Gain

$$\text{Gain}(S, A) = H(S) - \sum_{v \in \text{VAL}(A)} \frac{|S_v|}{|S|} H(S_v)$$

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$$= 0.91 - \frac{8}{14} \times 0.91 - \frac{6}{14} \times 1$$

$$= 0.049$$

11:11 / 12:39

Economic Recovery Indicators
Anticipating the India's GDP growth on a real-time basis
info.casacta.com

Gini Impurity intuition in depth in Decision Tree:

Tutorial 39- Gini Impurity Intuition In Depth In Decision Tree

Press Esc to exit full screen

GINI IMPURITY DT

f_1	f_2	f_3	q/p
C_1	D_1		Yes
C_2	D_2		Yes
			No
			No
			Yes
			...

① Entropy

$$H(S) = -P_1 \log_2 P_1 - P_2 \log_2 P_2$$

$4/13N$

$3/10N$

C_2 - Leaf Node

② GINI IMPURITY

$$GI = 1 - \sum_{i=1}^n (P_i)^2$$

$$= 1 - [(P_1)^2 + (P_2)^2]$$

2:24 / 11:12

Tutorial 39- Gini Impurity Intuition In Depth In Decision Tree

GINI IMPURITY DT

f_1	f_2	f_3	q/p
C_1	D_1		Yes
C_2	D_2		Yes
			No
			No
			Yes
			...

① Entropy

② GINI IMPURITY

$$GI = 1 - \sum_{i=1}^n (P_i)^2$$

$$= 1 - [(P_1)^2 + (P_2)^2]$$

$$= 1 - [(3/6)^2 + (3/6)^2]$$

$$= 1 - [0.25 + 0.25]$$

$$= 0.5$$

$H(S) = -P_1 \log_2 P_1 - P_2 \log_2 P_2$

$3/13N$

$3/10N$

C_1

C_2 - Leaf Node

$4/13N$

$3/6$

$3/6$

1

9:58 / 11:12