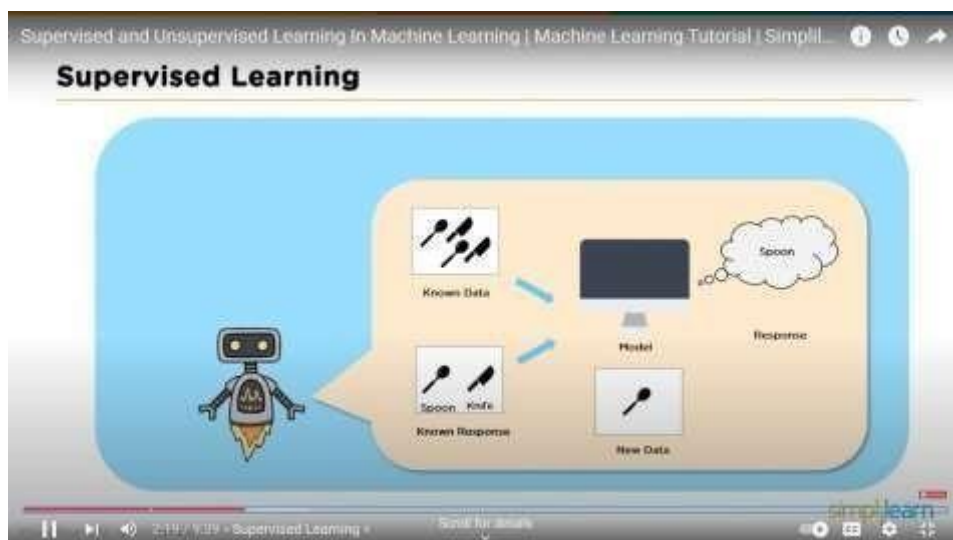


Prior Knowledge

Date	31 October 2022
Team ID	PNT2022TMID04987
Project Name	Developing A Flight Prediction Model Using Machine Learning

Prior Knowledge

Supervised and unsupervised learning:



Regression Classification and Clustering:



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/2018 11:44:41] "GET /hello/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

Decision Tree:

Tutorial 38- Decision Tree Information Gain

DECISION TREE INFORMATION GAIN

ENTROPY

$H(f_1) = -\frac{4}{15} \log_2 \frac{4}{15} - \frac{11}{15} \log_2 \frac{11}{15}$

$H(f_2) = -\frac{6}{14} \log_2 \frac{6}{14} - \frac{8}{14} \log_2 \frac{8}{14}$

$H(f_3) = -\frac{3}{14} \log_2 \frac{3}{14} - \frac{11}{14} \log_2 \frac{11}{14}$

Information Gain

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

$H(f_1) = 0.91$

$H(f_2) = 0.91$

$H(f_3) = 1$

$Gain(S, f_1)$

$= H(S) - \frac{4}{15} H(f_2) - \frac{11}{15} H(f_3)$

$= 0.91 - \frac{4}{15} \times 0.91 - \frac{11}{15} \times 1$

$= 0.049$

Tutorial 38- Decision Tree Information Gain

DECISION TREE INFORMATION GAIN

ENTROPY

$H(f_1) = -\frac{4}{15} \log_2 \frac{4}{15} - \frac{11}{15} \log_2 \frac{11}{15}$

$H(f_2) = -\frac{6}{14} \log_2 \frac{6}{14} - \frac{8}{14} \log_2 \frac{8}{14}$

$H(f_3) = -\frac{3}{14} \log_2 \frac{3}{14} - \frac{11}{14} \log_2 \frac{11}{14}$

Information Gain

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

$H(f_1) = 0.91$

$H(f_2) = 0.91$

$H(f_3) = 1$

$Gain(S, f_1)$

$= H(S) - \frac{4}{15} H(f_2) - \frac{11}{15} H(f_3)$

$= 0.91 - \frac{4}{15} \times 0.91 - \frac{11}{15} \times 1$

$= 0.049$

Gini Impurity intuition in depth in Decision:

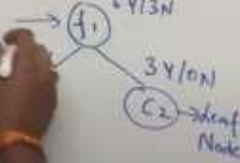
Tutorial 39- Gini Impurity Intuition In Depth In Decision Tree

GINI IMPURITY DT

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

① Entropy

$$H(S) = -P_+ \log_2 P_+ - P_- \log_2 P_-$$



② GINI IMPURITY

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

$$= 1 - [(P_+)^2 + (P_-)^2]$$



2:24 / 11:12

Scroll for details

