

P. O. R. N. I. M. A.

WISDOM BEGETS KNOWLEDGE

LECTURE NOTES

Campus: PCE Course: BTECH Class Section: IIIrd CS-C Date: 22-01-21
Name of Faculty: Praveen Kumar Yadav Name of Subject: Machine Learning Date: 16-03-21
Date (Prep): 22-01-21 Date (Del): 16-03-21 Unit No./Topic: 4

OBJECTIVE: To be written before the lecture (Pl. write in bullet points, the main topics covered in the lecture).

LOGISTICS REGRESSION

IMPORTANT / RELEVANT QUESTIONS:

What is Linear and Logistic regression? Explain in detail?

FEED BACK QUESTIONS (AFTER 20 MINUTES):

1) What are the differences between Linear and Logistic regression? Explain in detail.

OUTCOME OF THE DELIVERED LECTURE: To be written after taking the lecture (Pl. write in bullet points about students' feedback on this lecture, level of understanding of this lecture by students etc.)

REFERENCES: Text/Ref. Book with Page No. and relevant Internet Websites:

Logistics regression/analytical vidhya.



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Difference between Linear Regression and Logistic Regression :-

Linear Regression

- Used to solve Regression problem.
- response variable in case of Linear Regression is continuous in nature.
- It helps to estimate the change in dependent variable when there is a change in independent var.
- Its a straight line
- weather prediction
 - Tomorrow temp

Logistic Regression

- Used to solve classification problem
- response var is discrete in nature
- It helps to calculate the probability of an event taking place.
- sigmoid function (s-shaped curve)
- weather prediction
 - rain or not
 - sunny or not
 - snow or not
- classification of objects (is it a dog or not)



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Logistics Regression: is a mathematical model used in statistics to estimate the probability of an event occurring using some previous data.

Logistic Regression works with binary data, where either the event happens (1) or does not happen (0).

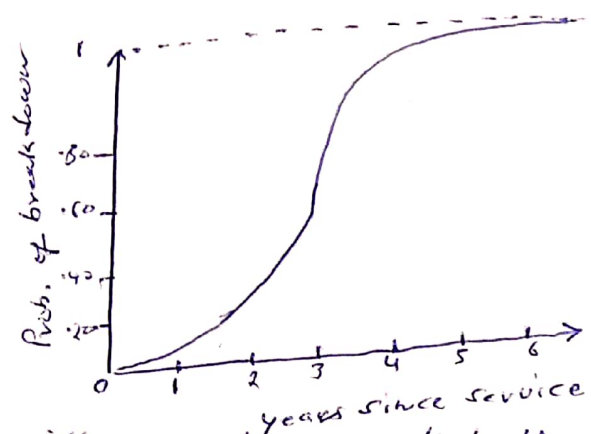
eg- you have to build a model to predict how many people survived the titanic ship.

→ employee got a promotion or not.

↳ its a binary classification (discrete value)

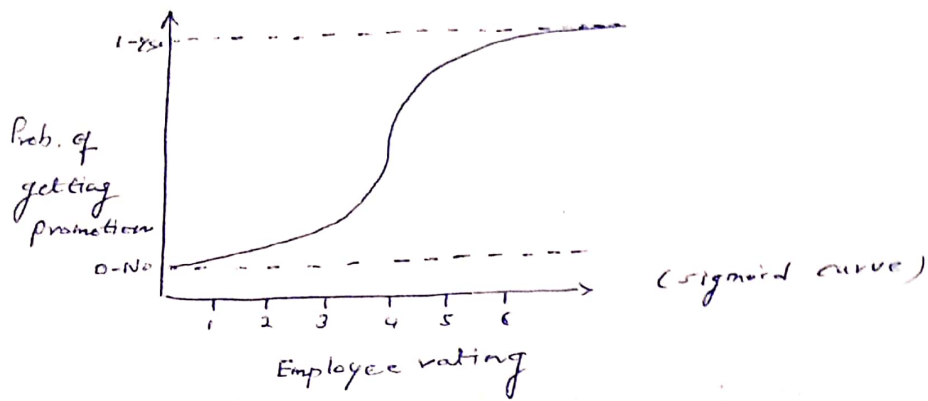
↳ Used for classification.

↳ is an algorithm for performing binary classification.



is its a classification algorithm, used to predict the

binary outcomes for a given set of independent variables. The dependent variable's outcome is discrete.



$$\text{odd (O)} = \frac{\text{Probability of an event Happening}}{\text{probability of an event not happening.}} = \frac{P}{1-P}$$

(odd of success)