

PRIOR KNOWLEDGE

TEAM ID: PNT2022TMID04288

PROJECT NAME: University Admit Eligibility Predictor

Prior Knowledge

Prior knowledge is the information and educational background that a student possesses prior to learning new material. By utilising existing knowledge before dealing with new content, a learner's grasp of instructional material can be increased.

According to a general view of how pupils learn, the success of learning is governed by how much the learner already knows about a specific topic or related topics. This information was most likely accumulated through time in a number of methods. If the past knowledge is correct and congruent with the new material being taught, the influence on learning is positive.

However, if existing knowledge disagrees with new information, the effect on new learning might be detrimental.

Supervised and Unsupervised Learning In Machine Learning | Machine Learning T...

What is Machine Learning?

Machine Learning is the science of making computers learn and act like humans by feeding data and information without being explicitly programmed!

Flowchart:

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graph LR; PD[Past Data] -- Train --> SL[System Learns]; SL -- Analyse --> PD; SL -- Prediction --> O[Output];
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Text boxes:

- Data is processed
- System Learns
- Machine Learning makes predictions and decisions based on past data

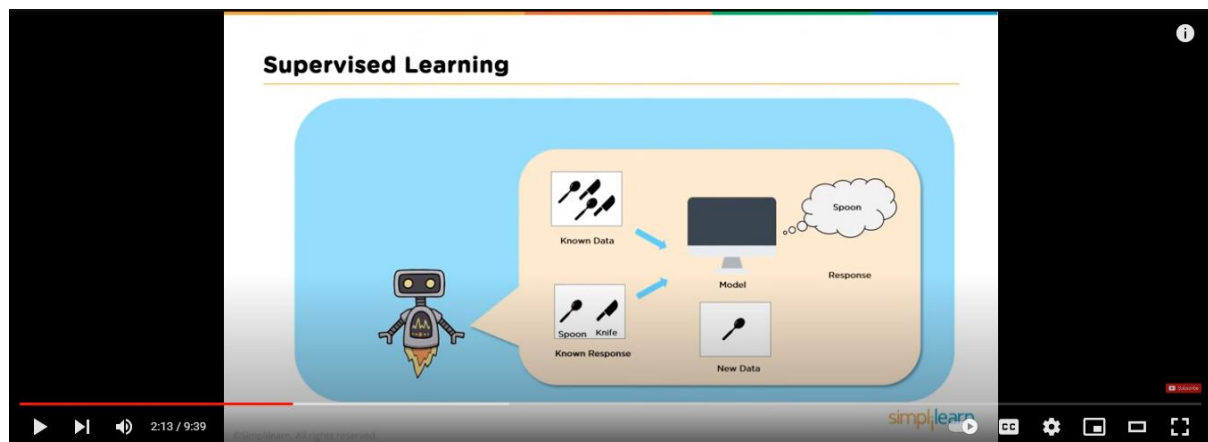
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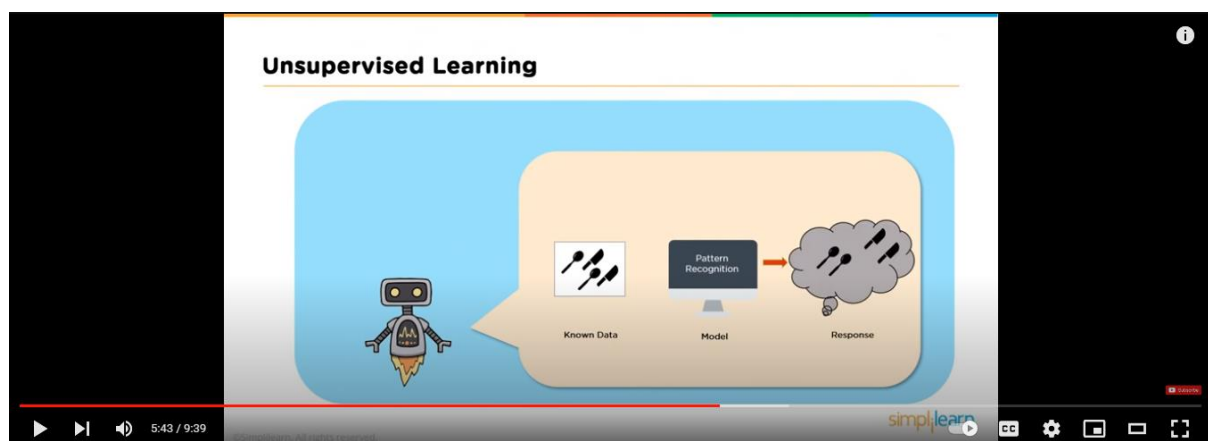
Supervised Learning and Unsupervised Learning

A machine is trained using 'labelled' data in Supervised Learning. When a dataset has both input and output parameters, it is considered to be labelled. In other words, the right answer has already been assigned to the data.

As a result, the approach resembles a classroom setting in which a student learns in the presence of a supervisor or teacher. Unsupervised learning algorithms, on the other hand, allow models to discover and learn on their own.



Supervised machine learning is extremely useful in tackling real-world computational challenges. The system learns from labelled training data to predict outcomes for unlabeled data. As a result, highly competent data scientists are required to design and deploy such models. Data scientists utilise their technical knowledge to rebuild models over time in order to retain the integrity of the insights provided.



Unsupervised learning, also known as deep learning, analyses and clusters unlabeled datasets using machine learning algorithms. Without the need for human intervention, these algorithms discover hidden patterns or data groupings. Its ability to find similarities and differences in data makes it an ideal solution for exploratory data analysis, cross-selling strategies, customer segmentation, and image recognition.

Clustering, Classification and Regression:

In the field of machine learning we all know the type of problems are different, sometimes we predict the value on previous set of data – Where data learn from available dataset, Or sometimes grouping them into some cluster. So today we are going to see what these terms are – Clustering, Classification and Regression means in Data science field.

Let's dive into this concept. Generally machine learning algorithms are categorised on the basis of output type and type of problem that need to be addressed.

So these algorithm are divided into three categories –

1. Classification
2. Regression
3. Clustering

Classification: – Classification is the type of supervised machine learning, for any given input, the classification algorithm help in the prediction of the class of the output variables. There can be multiple type of classification are – binary classification, multi-class classification.

Common ML Problems

- **Classification**
- **Regression**
- **Clustering**

Types of classification –

- K – Nearest Neighbour
- Logistic regression
- Decision tree
- Random forest
- Naive Bayes
- SVM (Support vector machine)

Regression: – Regression is the type of supervised machine learning.

When the output is continuous like age, height etc. one of very popular regression algorithm is Linear Regression.

Types of Regression –

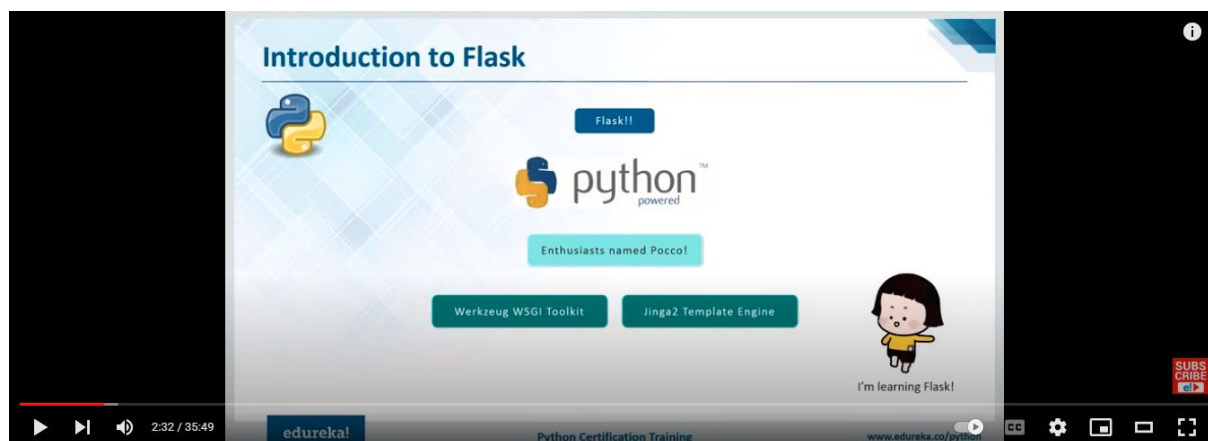
- Linear Regression
- Ridge Regression
- Lasso

Clustering: – Clustering is unsupervised machine learning algorithm, it is used to group data point having similar characteristics as cluster. Clustering is divided into two groups

1. Hard clustering – In hard clustering, the data point is assigned to one of the clusters only.
2. Soft clustering – It provides a probability likelihood of a data point to be in each of the clusters.

Python Flask:

Flask Tutorial provides the basic and advanced concepts of the Python Flask framework. Our Flask tutorial is designed for beginners and professionals. Flask is a web framework that provides libraries to build lightweight web applications in python. It is developed by Armin Ronacher who leads an international group of python enthusiasts (POCCO).



What is Flask?

Flask is a web framework that provides libraries to build lightweight web applications in python. It is developed by Armin Ronacher who leads an international group of python enthusiasts (POCCO). It is based on WSGI toolkit and jinja2 template engine. Flask is considered as a micro framework.