SNS COLLEGE OF ENGINEERING

Kurumbapalayam(Po), Coimbatore – 641 107
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Department of Information Technology

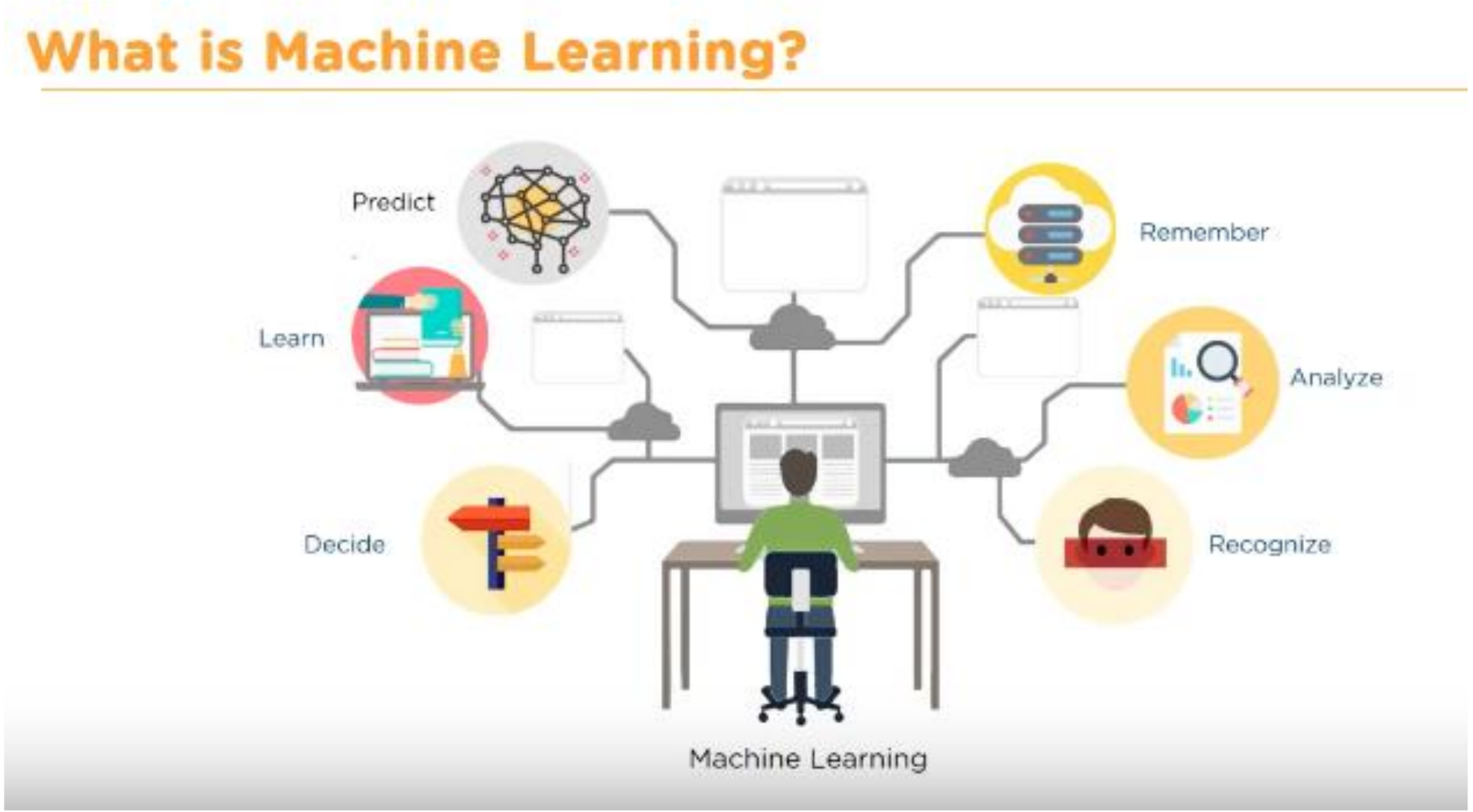
19IT601 – Data Science and Analytics

III Year / VI Semester

Unit 3 – PREDICTIVE MODELING AND MACHINE LEARNING

Topic 4: Machine Learning Algorithms

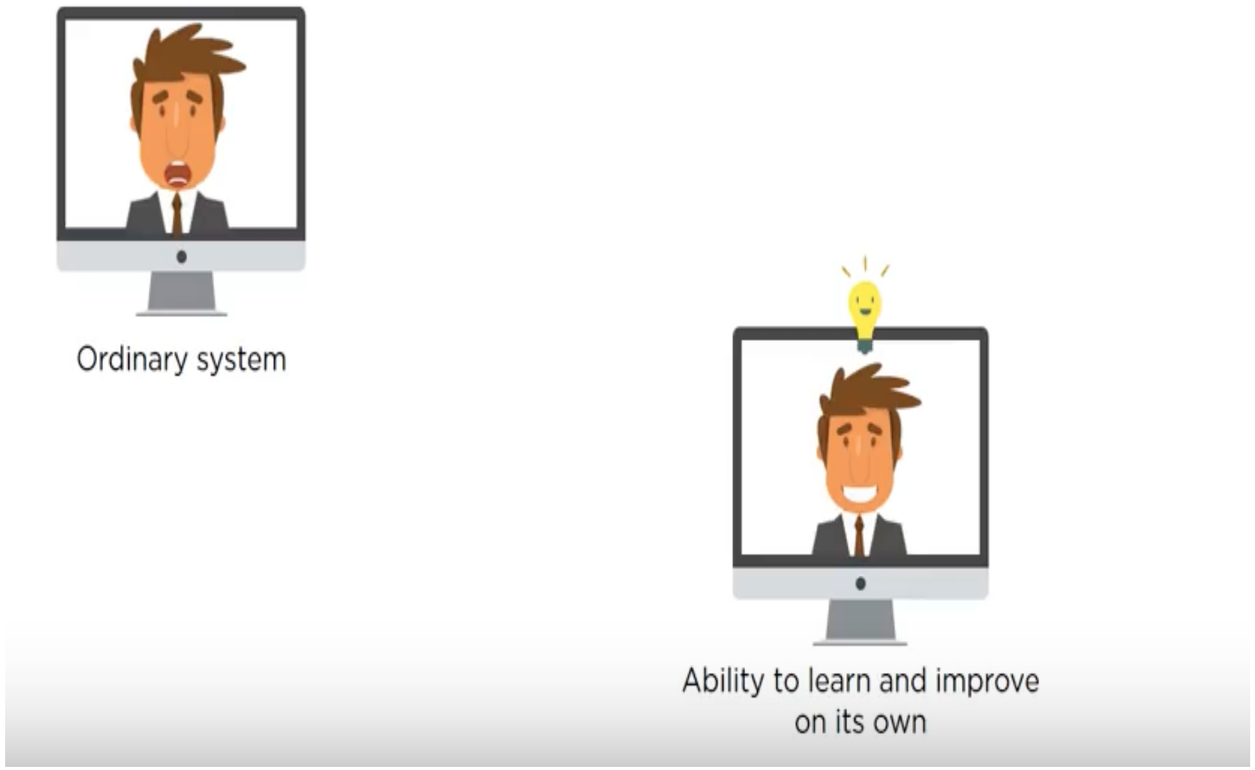
Machine Learning



Machine Learning

What is machine learning?

A system gets ability to automatically learn and improve based on experience.



Machine Learning

Types Machine Learning

Supervised Learning

Supervised Learning - Classification

- KNN (K Nearest Neighbor)
- SVM (Support Vector Machine)

Decision Tree

- Most classification methods are supervised,
- They start with a training set of pre-labeled observations to learn how likely the attributes of these observations may contribute to the classification of future unlabeled observations.
- Classification is widely used for prediction purposes.

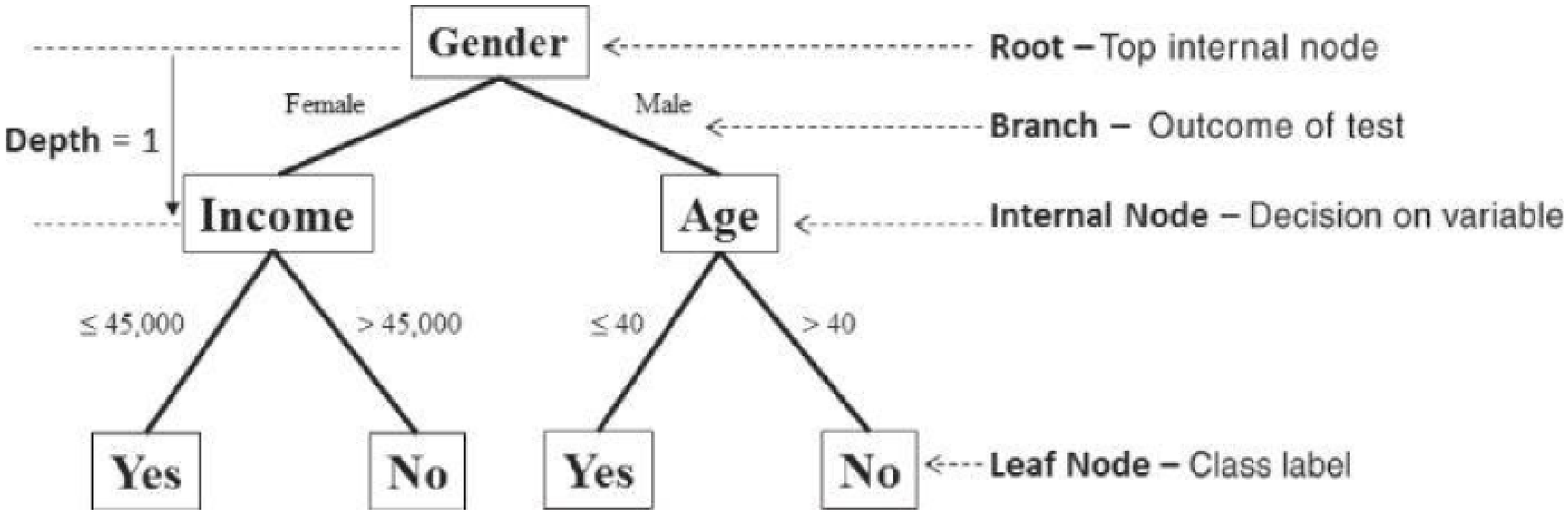
Example

- Classification can help health care professionals diagnose heart disease patients.
- Based on an e-mail's content, e-mail providers also use classification to decide whether the incoming e-mail messages are spam.

Decision Tree

- The input values of a decision tree can be categorical or continuous.
- A decision tree employs a structure of test points (called nodes) and branches, which represent the decision being made.
- A node without further branches is called a leaf node. The leaf nodes return class labels.
- Decision trees have two varieties: classification trees and regression trees.
- Classification trees usually apply to output variables that are categorical—often binary—in nature, such as yes or no, purchase or not purchase, and so on.
- Regression trees, on the other hand, can apply to output variables that are numeric or continuous, such as the predicted price of a consumer good or the likelihood a subscription will be purchased.

Decision Tree



THANK YOU