

CERTIFICATION IN MACHINE LEARNING



Course Code : OCIT0014

Machine learning is the science of getting computers to act without being explicitly programmed, Instead of writing code, you feed data to the generic algorithm, and it builds logic based on the data given. Machine learning algorithms allow for computers to train on data inputs and use statistical analysis in order to output values that fall within a specific range.

Curriculum

Module 1:

· Introduction to Python, Numpy Basics, Pandas Basics

Module 2:

· Matplotlib basics, Seaborn basics

Module 3:

· Introduction to Machine Learning, Data Preprocessing, Creating validation rules

Module 4: Regression

· Introduction to Regression, Regularized Regression, Auto selection of parameters, Evaluation of best models, Model representation

Module 5: Model representation

· Introduction to Classification, Regularized Classification, Auto selection of parameters, Evaluation of best models, Model representation

Module 6: Introduction to Decision Tree

· Introduction to Decision Tree, Auto selection of parameters, Evaluation of best models, Model representation

Module 7: Introduction to Random Forest

· Introduction to Random Forest, Auto selection of parameters, Bagging and Boosting Models, Evaluation of best models, Model representation

Module 8: Introduction to SVM

· Introduction to SVM, Auto selection of parameters, Evaluation of best models, Model representation

Module 9: Introduction to Neural Network

· Introduction to Neural Network, Auto selection of parameters, Evaluation of best models, Model representation

Module 10: Introduction to Unsupervised Learning

- Introduction to Unsupervised Learning, Auto selection of parameters, Evaluation of best models, Model representation

Module 11: Introduction to Dimension Reduction

- Introduction to Dimension Reduction, Auto selection of parameters, Evaluation of best models, Model representation

Module 12: Introduction to Nearest Neighbors

- Introduction to Nearest Neighbors, Auto selection of parameters, Evaluation of best models, Model representation

Learning Outcomes

- Understand the different machine learning techniques and its application
- Understand the importance of assumptions in estimating the parameters in simple linear regression analysis.
- Understand the importance of simple linear regression in predicting new observations
- Understand the important multiple linear regression in predictive techniques and its assumptions.
- Apply the non-linear model for the new observation predictions and its importance in business.
- Understand the effect of model assumptions in estimating the coefficients in multiple linear regression analysis.