

Artificial Intelligence & Machine Learning Syllabus

1.0 Artificial Intelligence Overview

- Application of AI
- Types of Optimization
- Hill Climbing
- Machine Learning Overview (Some Mathematical Aspects)
- Regression vs. Pattern Classification
- Supervised and Unsupervised Learning
- Hypothesis Space and Inductive bias
- Time Series Analysis
- Error and deviation of Mean Squared error.

2.0 Machine Learning in depth

- Introduction to Machine Learning
- Linear Regression
- Decision Tree
- K-Nearest Neighbour
- Supervised Learning and Linear Regression
- Classification and Logistic Regression
- Decision Tree and Random Forest
- Naïve Bayes and Support Vector Machine
- Unsupervised Learning
- Unsupervised learning walkthrough – K means

3.0 Implementation using Python

- Tensorflow introduction and how to use it.
- Keras, OPENCV, numpy, pandas usage.
- Yolo-v5, yolo-v3, yolo-v7, mobile ssd, object detection
- Creating a Model with training dataset
- Saving and Testing a Model
- Example classification: Focus on Image, Text, Signal
- Sentiment Analysis