Purpose of the course.

Prerequisites

Reference Materials

1. What is Machine Learning Algorithm?
2. Explain an example using if-else logic and how machine learning differs
3. What is a task? Example of tasks – which are ML tasks and which are not ML tasks.
4. What is performance measure? Discrete and continuous performance measures.
5. Accuracy, Error Rate, 0-1 Loss
6. What is a model?
7. Discrete values and continuous values
8. Training set, validation set and test set.
9. What is an experience?
10. ML and Statistics
11. Supervised and unsupervised learning
12. P(X) is Unsupervised Learning (Think learning distribution). P(Y|X) is supervised learning (Classification, think Logistic Regression).
13. Dataset representation – Design Matrix, Set of Vectors.
14. Example – Linear Regression (Layman example)
15. Line formula.
16. What is slope?
17. Formal definition of Linear Regression
18. Representation of Matrix, Vector and Scalar.
19. What is a function? Different functions (Linear, Quadratic, Exponential and Logarithmic) – What are each one of these.
20. Hashmap way of explaining linear regression: Issues related to this.
21. Geometric representation of the problem.
22. What is a model?
23. Parameters
24. Co-efficient, input variable, output variable, dependent variable, independent variable.
25. Weights
26. Dimensions, variables, features.
27. Explain task, experience and performance in terms of linear regression.
28. MSE – mean squared error.
29. Transpose of a Matrix
30. Normal Equation
31. Bias