[ML]

Unit-1

Ingredients of ML & What is ML

~~Linear classification~~ Unit: 2

Decision Tree:

- Appropriate problems for Decision Tree
- Decision Tree Algorithm & Problem (ID3 variants)
- Issues in Decision Tree

~~Linear~~ Models:

- SVM (Linear SVM, non linear SVM (Kernal function))
  Soft, Hard ~~SVM~~ margin SVM

Unit: 3

Distance based models

- different distance ~~met~~ metrics
- k-means Algo & Problem
- k-medoids Algo

Hierarchical Clustering:

- Concept

Bayesian Learning:

- What is Bayes theorem. & Derive an expression for H Map(θ) / HML derivation
- What is Bayes optimal Classifier / Problem may be a

IM

Applications & definitions

bias, variance

overfit, underfit

Confusion matrix

~~Accuracy~~

Performance Metrics (Acc, Pr, Rec, F1 Score)

* Explain Navie Bays classification (or) Naive Bayes Alg

*H) Why navie Bays is called Naive

* Explain about Bayesian Belief Networks

[Condition probability
Conditional Independance
Joint probability] formulas

Unit:4:

ANN (Tom Richo TB reference)

*H) What is ANN. (or) What is Biological Neuron.

(or) Motivation to create Artificial Neuron

- ~~Appropriate~~ problems for ANN
- Explain about feed forward Neural Network.
- Explain about perceptron & perceptron training
- Explain back propagation Algo

Advanced Topics in ANN.

- If there is overfitting how do you change from
- RNN (for sequence data)

Reinforcement Learning: (What is, Application, q-function)

- Explain Reinforcement Learning
- Explain Q-Learning or Q-function.

Algos & Problems

D-T (Decision Tree)

Naive Bayes

KNN

K-means

Bayes optimal classifier