IN DEPTH MACHINE LEARNING

WITH PYTHON

AIM OF THE CLASS

- 1.A quick revision
- 2.Newton's Method
- 3.Binary classification
- 4.Likelihood
- 5.Multinomial Classification
- 6.Softmax Multivariable Classification
- 7.Weight Decay

TERMINOLOGY:

- 1. Training Set: Ɗ = {(xi,yi)}i= 1 to n
- 2. Fitting Parameter : ɵ
- 3.Hypothesis function : hɵ(x)
- 4. Cost Function : J(ɵ)
- 5.Learning Rate : ɑ

A QUICK REVISION

- 1.Linear Regression(Theory)
- 2.Optimising Techniques :
- a. Batch Gradient Decent(Theory)
- b. Stochastic Gradient Decent(Theory)
- c. Normal Equation(Theory)
- 3. Locally Weighted Regression(Theory)
- 4. Feature Engineering

NEWTONS METHOD

- A faster way to converge.....

BINARY CLASSIFICATION

- WHERE?
- HOW?
- Linear Classification
- Non-Linear Classification(We will see later in the slide)

LIKELIHOOD

- Going into probability……
- Against the cost

USING LINEAR AND NON LINEAR MODELS

- Feature Engineering

MULTINOMIAL CLASSIFIER

- Use k different Classifier for k Class Output
- When to use???
- Do I really need k classifier???

SOFTMAX CLASSIFICATION

- A better classification technique than K different Classifier if the data is explicit.
- Properties of Softmax Classifier

BINARY CLASSIFICATION AS A SPECIAL CASE OF SOFTMAX MULTIVARIABLE CLASSIFICATION

WEIGHT DECAY

- To avoid overfitting……

CODES