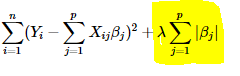
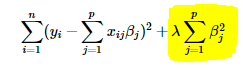
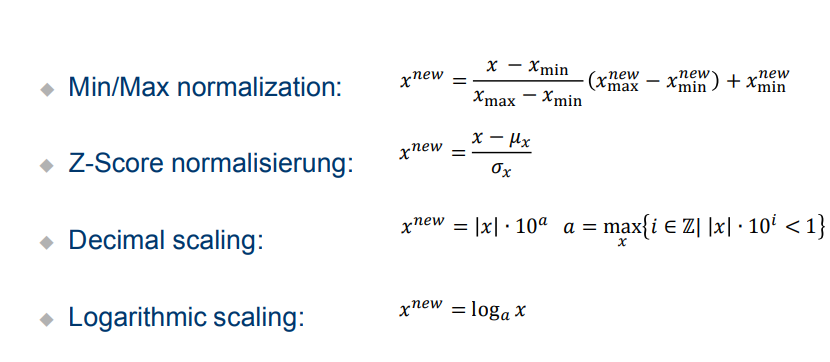
**Regularization**

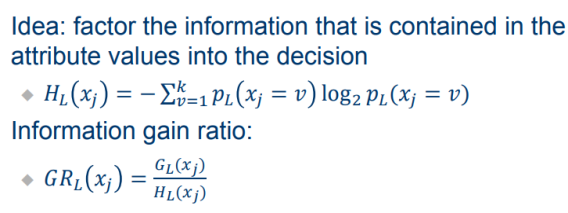
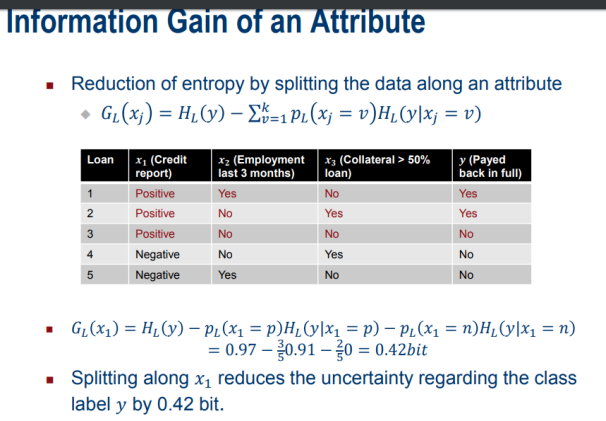
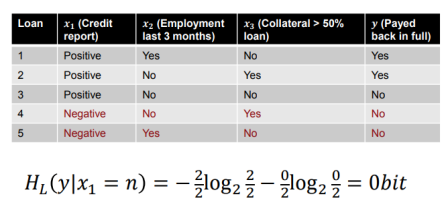
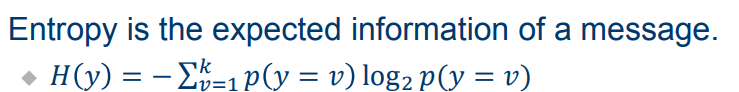
* + L0 - Count of the non-zero weights – Difficult minimize
  + L1 Lasso - Sum of the attribute weights
    - It set the weights to 0 for irrelevant attributes



* + L2 Ridge (Squared Euclidean norm) - Sum of the squared attribute weights. Used to avoid Overfiiting.

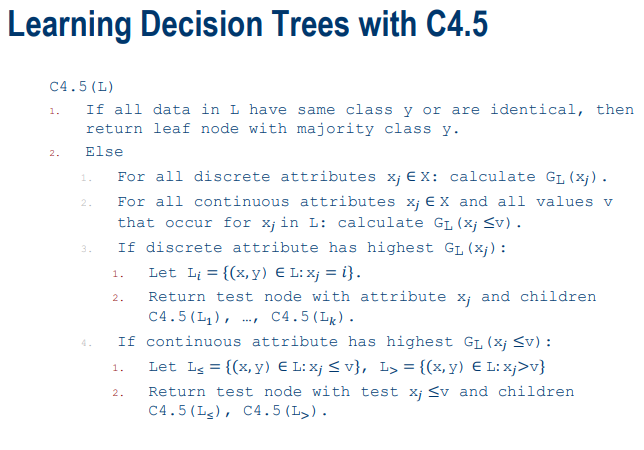
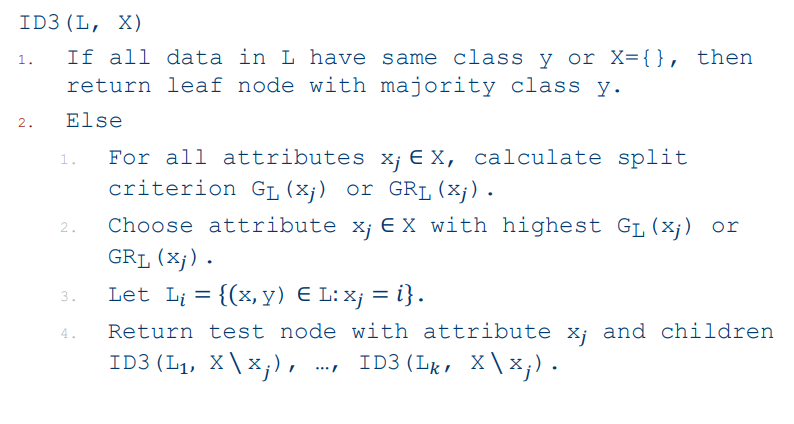


**Scaling:**

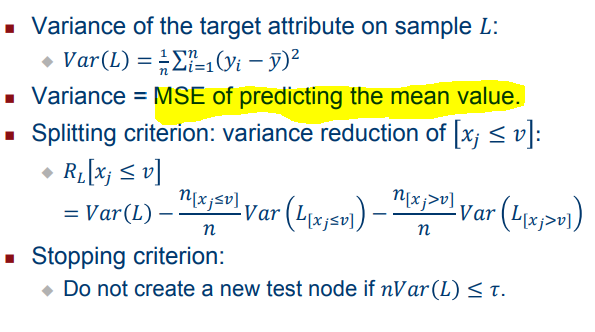


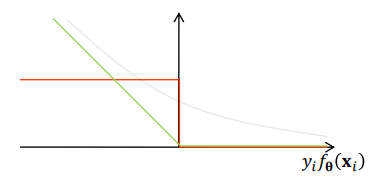
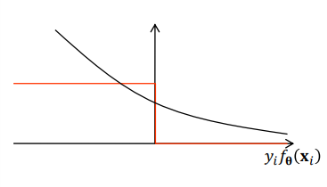
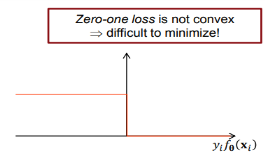
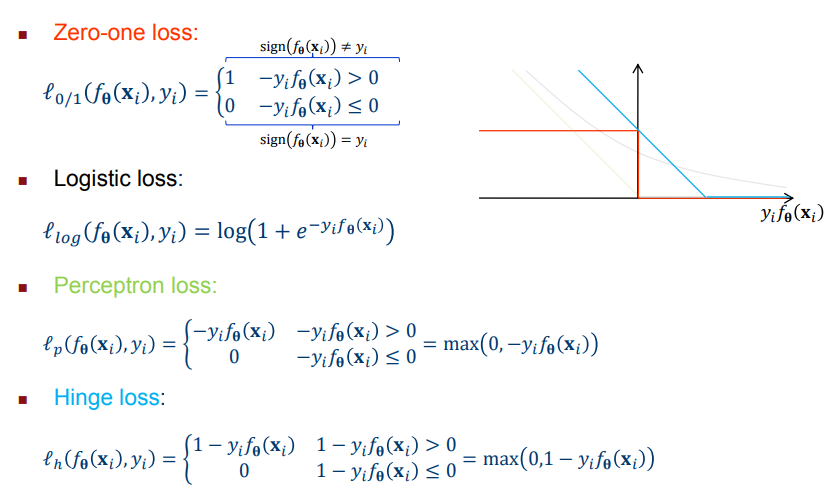
## Information Gain

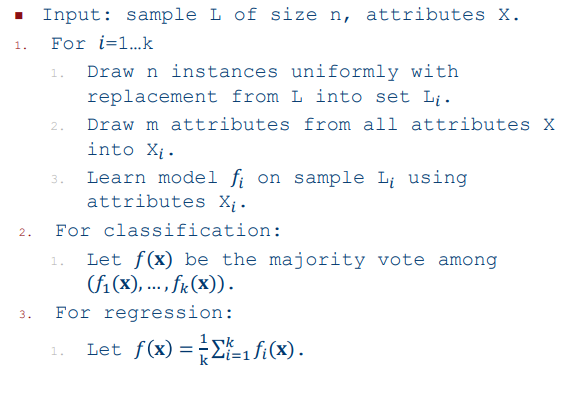
## ID3 C4.5

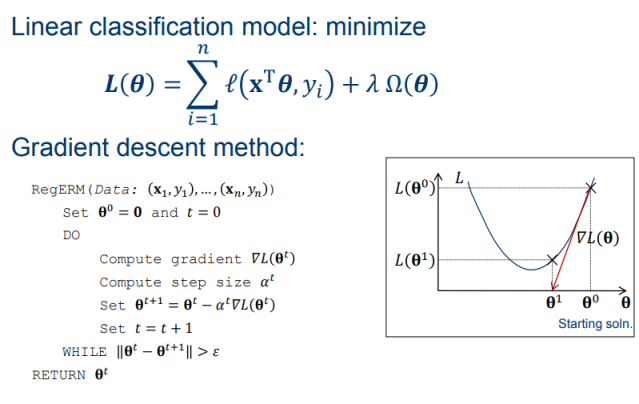


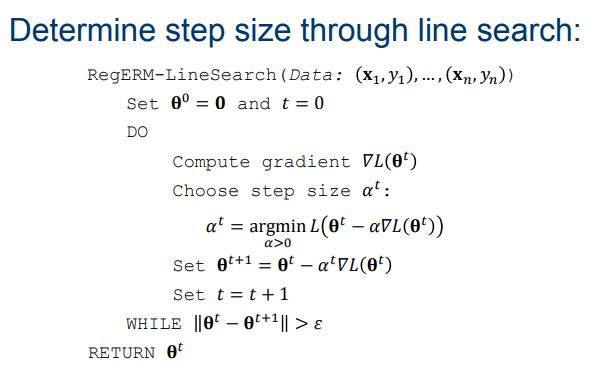
## Regression Trees

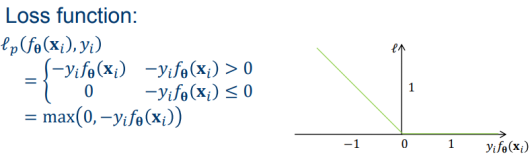
**Random Forest Loss in Classification**

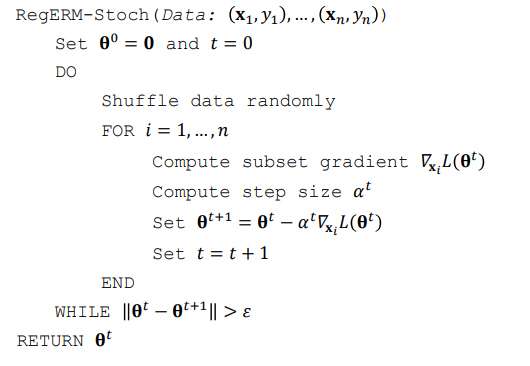
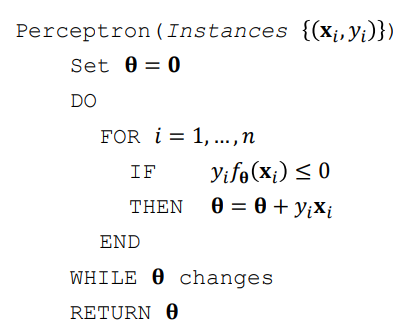


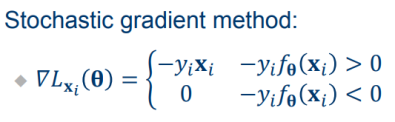


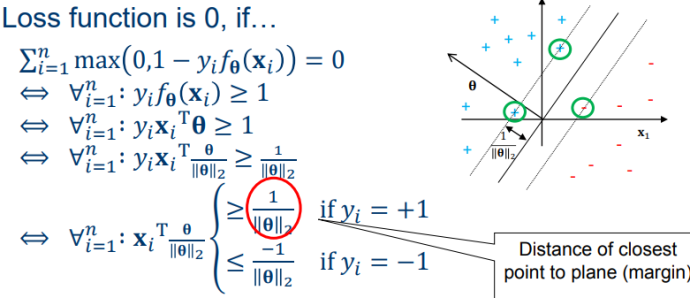
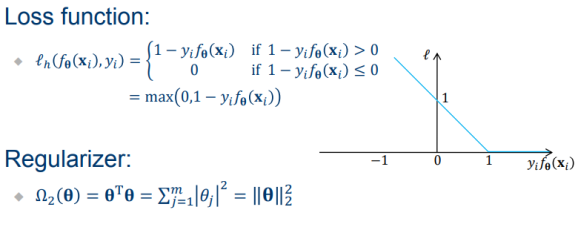
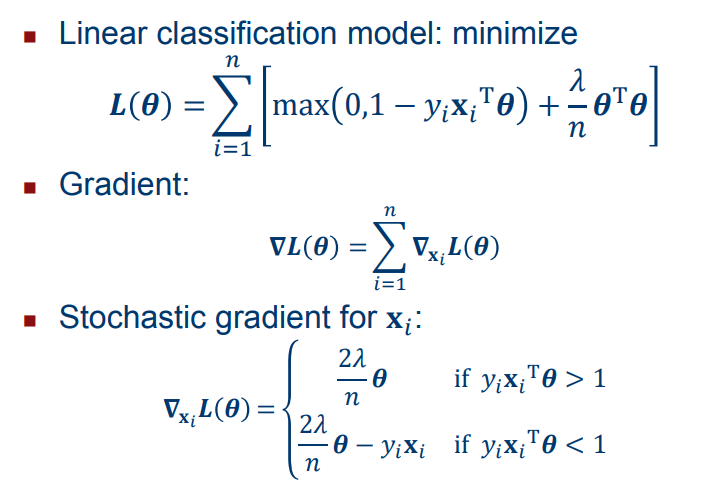
**Gradient descent with Step size (line search)**

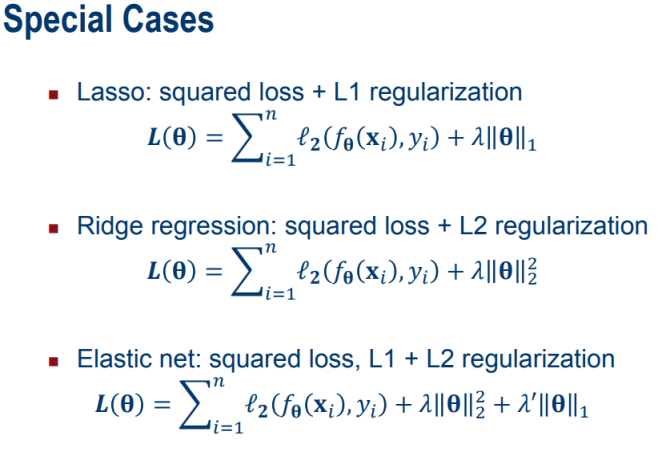
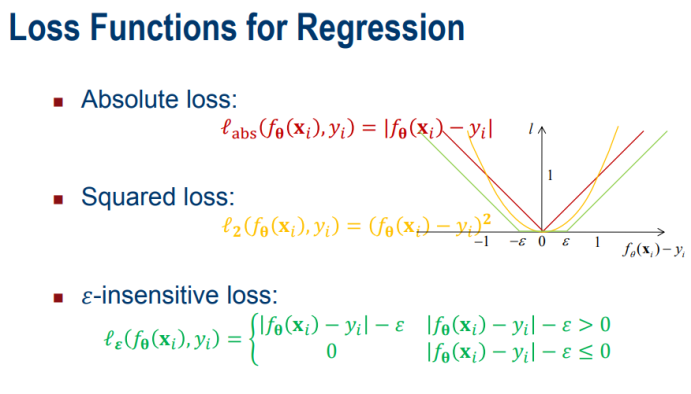




**Stochastic Gradient descent Perceptron**



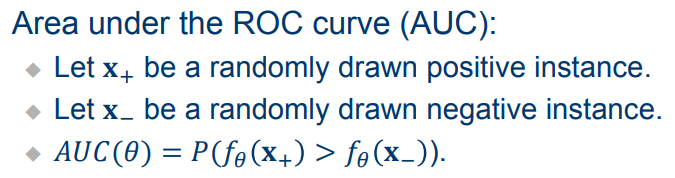
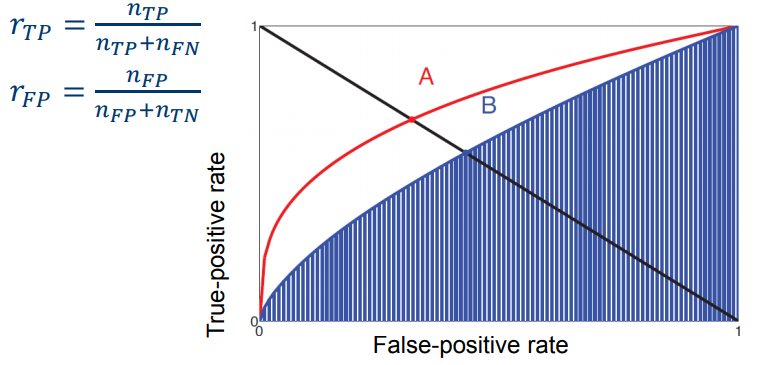
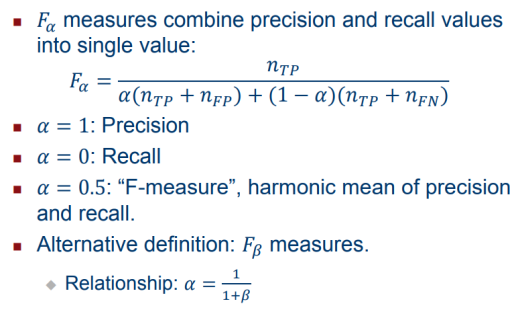
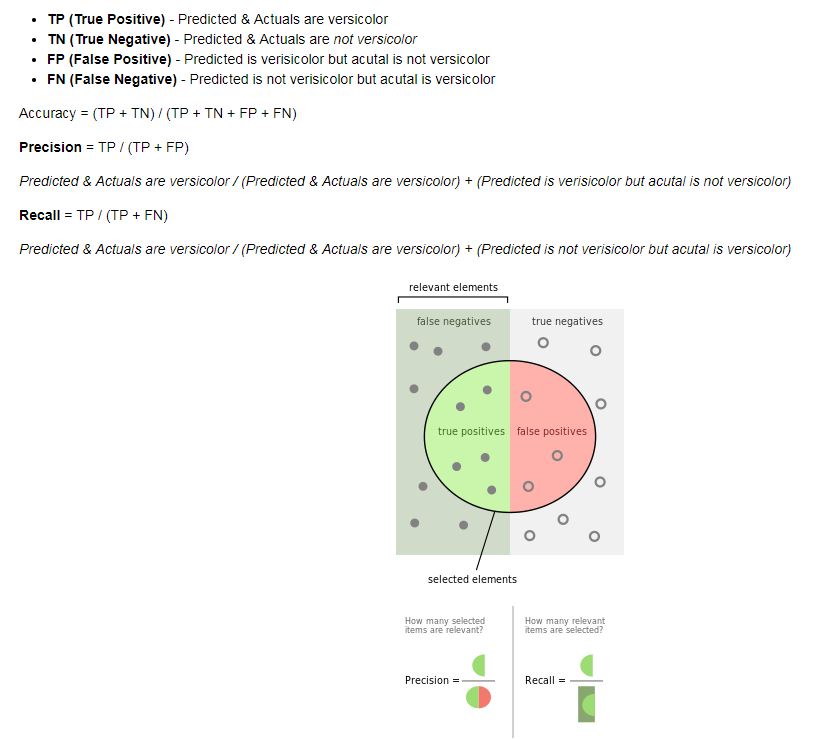
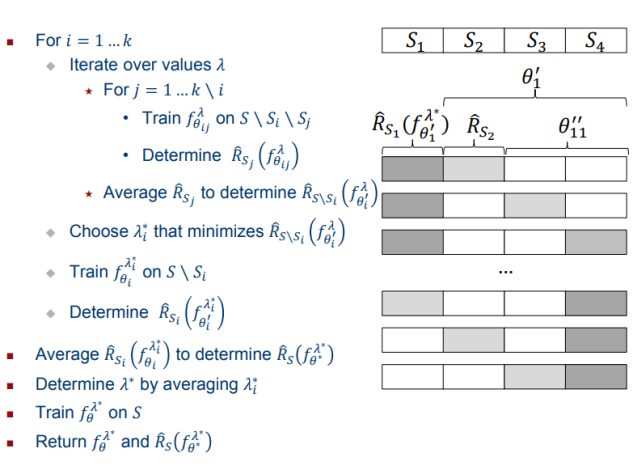
**SVM**



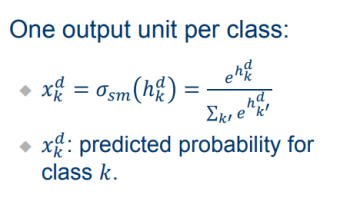
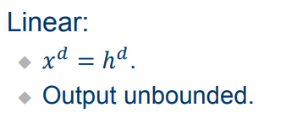
**Linear Regression**

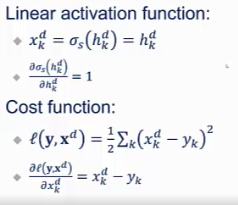
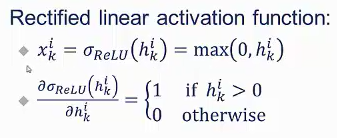
**Ridge Lasso**

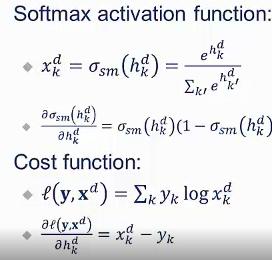
**Nested Cross Validation Precision & Recall**



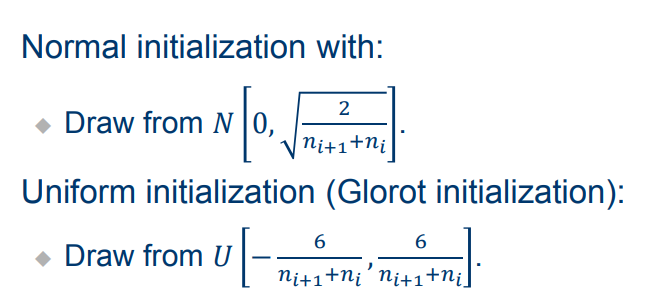
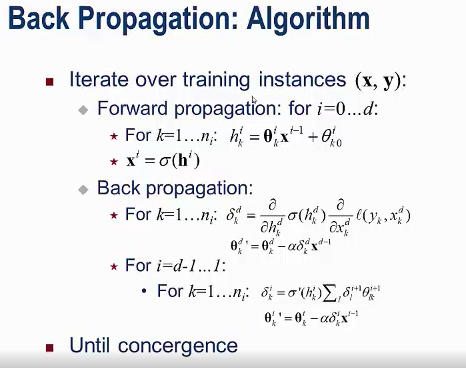
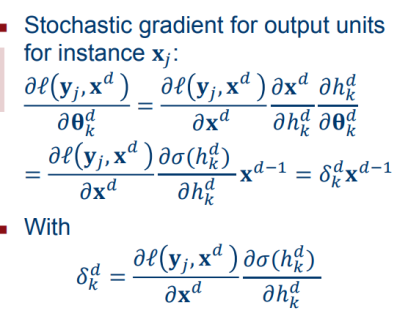
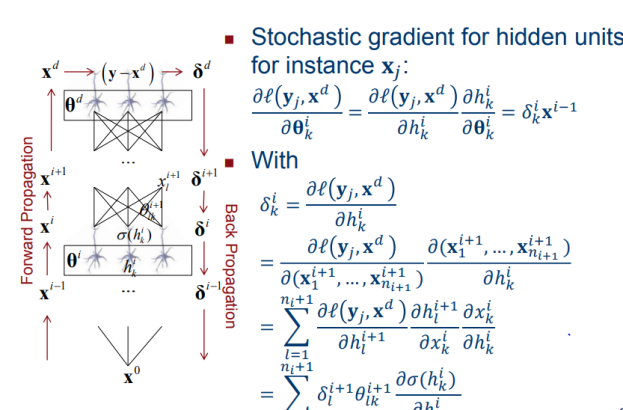
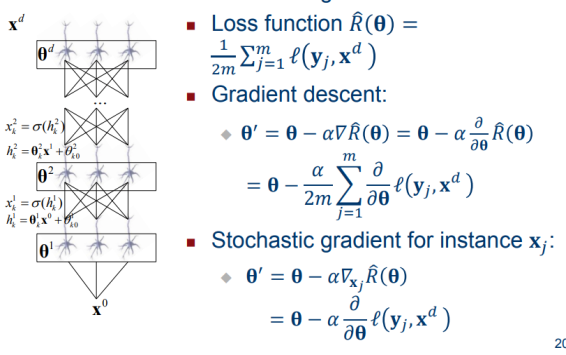
**Neural Network**

**Softmax Activation Linear Activation Rectified Linear Units**

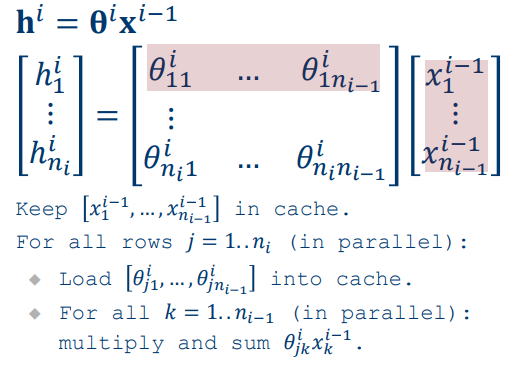
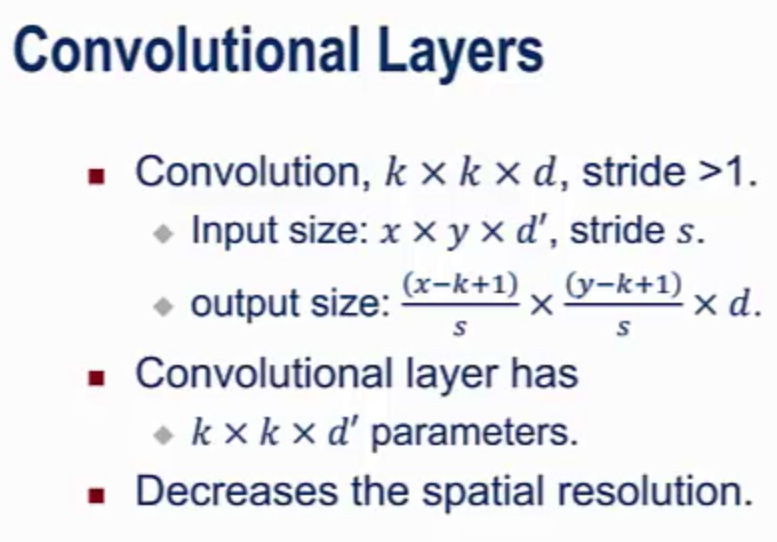


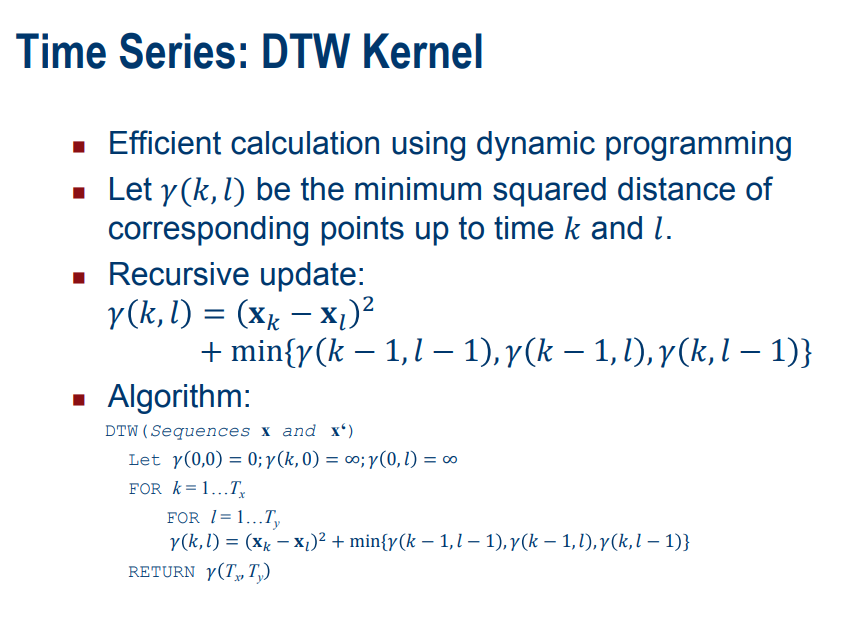


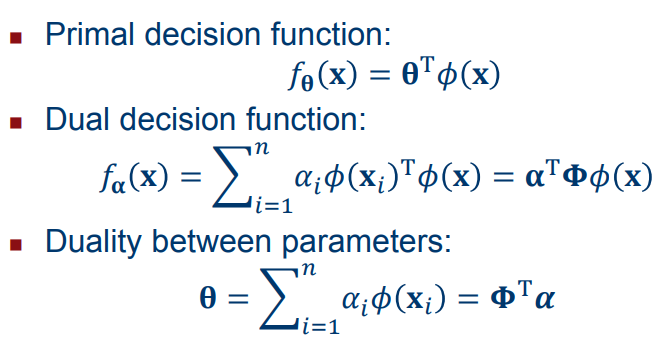
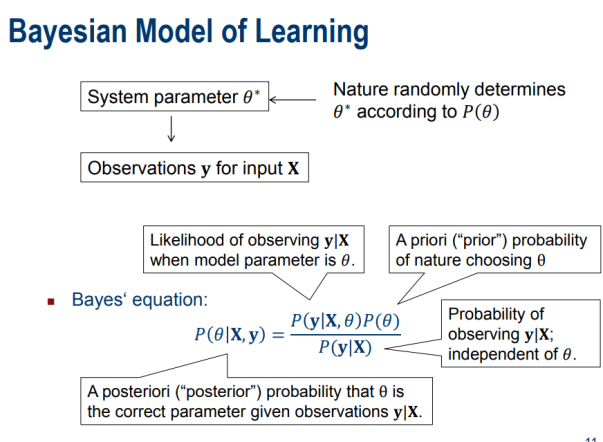
**Back Propagation**



**n** *is number of layers*

**Parallel Inference – weight calculation CNN**

**Primal, Dual, Duality Time series:**

**Bayesian Model**

