General Notes

CS, ML and Stats

Patrick Daly

1. Computer Science

   (a) Algorithms
   (b) Data Structures
   (c) Linux

2. Machine Learning (combine with stats?)

   (a) Supervised
   (b) Unsupervised

3. Linear Algebra

   (a) Norms

      i. Euclidean or Frobenius (L^2)
      ii. Manhatten (L^1)
      iii. Infinity (L^∞)
      iv. Nuclear (L^0)

   (b) Special Matrices & Vectors

      i. Diagonal
      ii. Symmetric
      iii. Positive Definite
      iv. Positive Semi-Definite
      v. Negative Definite
      vi. Negative Semi-Definite

   (c) Eigendecomposition
   (d) Singular Value Decomposition (SVD)
   (e) Principal Component Analysis (PCA)
   (f) Independent Component Analysis (ICA)
   (g) Canonical Component Analysis (CCA)
   (h) Factor Analysis

4. Statistics

   (a) Probability Theory
   (b) Distributions

      i. Discrete
        A. Binomial
        B. Geometric
        C. Uniform
        D. Exponential
        E. Poisson
     ii. Continuous
        A. Normal

(c) Combinatorics