

DS 644 Exam review sheet

1. Dot products
2. Euclidean distance
3. L2 norm
4. Linear vs non-linear data
5. Geometry of linear classifier
6. Least squares objective
7. Gradient descent for least squares objective
8. Concept of margin of classifier
9. Hinge (SVM) objective
10. Gradient descent for hinge objective
11. 01 loss objective
12. Coordinate descent vs gradient descent
13. Effect of outliers on least squares vs SVM vs 01 loss
14. Balanced accuracy
15. Cross validation
16. Single layer neural network with least squares objective
17. Neural network activations
18. Back propagation algorithm
19. Big data model training – Stochastic gradient descent
20. Big data model training – Adaptive learning rates
21. Cross-entropy objective
22. Multiclass classification
23. One hot encoding for categorical variables
24. Convolutions for computer vision – simple 3x3 convolutions applied to matrices
25. Text encoding – TFIDF
26. High dimensional data visualization: Principal component analysis
27. Big data model training – Transfer learning
28. Big data model training – Normalization and batch normalization