Elements of Machine Learning

Assigment 2 - Problem 2

Sangeet Sagar(7009050), Philipp Schuhmacher(7010127)
{sasa00001,phsc00003}@stud.uni-saarland.de

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Problem 2 (T, 6 Points). KNN, LDA, QDA and LR

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1. KNN: makes the assumption that everything is locally constant
2. LDA: makes the assumption that every class is Gaussian and they all have the same variance
3. QDA: makes the assumption that all log odds of the posterior probs are quadratic and that all classes are Gaussian and that the covariances are the same
4. LR: makes the assumption that all log odds of the posterior pbs are linear and that you have unvariate data

KNN and QDA are very good for non-linear decision boundaries, but if the decision boundary is extreme non-linear then i would recommend KNN, if it is not that extreme i would recommend QDA

For linear decision boundaries I would recommend LR and LDA. If the normality assumption does not hold I would recommend LR, if it holds both work great

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1. In LDA some information can get lost
2. If the normality assumption does not hold LR performs much better