

STAT 2450 - R Functions

k-Nearest Neighbour

- `knn()` {class}

Linear Regression

- Simple Linear Regression
 - `lm()`
 - `glm()`
- Multiple Linear Regression
 - `lm()`
 - `glm()`

Classification

- Logistic Regression
 - `glm(..., family = binomial)`
- Linear Discriminant Analysis (LDA)
 - `lda()` {MASS}
- Quadratic Discriminant Analysis (QDA)
 - `qda()` {MASS}

Resampling Methods

- Cross-Validation
 - The validation Set Approach
 - * `sample()`
 - Leave-One-Out Cross-Validation (LOOCV)
 - * `cv.glm()` {boot}
 - * `sample()`
 - k-Fold Cross-Validation
 - * `cv.glm(..., K = )` {boot}
 - * `sample()`
- Bootstrapping
 - `boot()` {boot}

Model Selection and Regularization

- Subset Selection
 - Best Subset Selection
 - * `regsubsets()` {leaps}
 - Stepwise Selection
 - * `regsubsets(..., method = 'forward')` {leaps}
 - * `regsubsets(..., method = 'backward')` {leaps}
- Shrinkage Methods
 - Ridge Regression
 - * `glmnet(..., alpha = 0)` {glmnet}
 - The Lasso
 - * `glmnet(..., alpha = 1)` {glmnet}
- Dimension Reduction Methods
 - Principal Components Analysis (PCA)
 - * `prcomp()`
 - Principal Components Regression (PCR)
 - * `pcr()` {pls}

Tree-Based Methods

- Decision Trees
 - `tree()` {tree}
 - `cv.tree()` {tree}
 - `prune.tree()` {tree}
- Bagging
 - `randomForest(..., mty = p)` {randomForest}
- Random Forests
 - `randomForest()` {randomForest}
- Boosting
 - `gbm()` {gbm}