

Abbass Al Sharif, PhD

Assistant Professor of Clinical Data Sciences

DSO 530: Applied Modern Statistical Learning Techniques

Syllabus

[Download Course Syllabus](#)

Slides

Chapter 2: Statistical Learning- [pdf](#) ([part 1](#), [part 2](#)), [ppt](#) ([part 1](#), [part 2](#))
Chapter 3: Linear Regression- [pdf](#), [ppt](#)
Chapter 4: Classification- [pdf](#) ([part 1](#), [part 2](#)), [ppt](#) ([part 1](#), [part 2](#))
Chapter 5: Resampling Methods- [pdf](#), [ppt](#)
Chapter 6: Linear Model Selection and Regularization- [pdf](#), [ppt](#)
Chapter 7: Moving Beyond Linearity
Chapter 8: Tree-Based Methods- [pdf](#) ([part 1](#), [part 2](#)), [ppt](#) ([part 1](#), [part 2](#))
Chapter 9: Support Vector Machines- [pdf](#), [ppt](#)
Chapter 10: Unsupervised Learning- [pdf](#), [ppt](#)

R Code with Explanations

KNN for Classification: [pdf](#)
Simple Linear Regression: [html](#), [pdf](#)
Multiple Linear Regression: [html](#), [pdf](#)
Logistic Regression, LDA, QDA: [pdf](#)

(Similar documents will be added during the Fall 2014 semester)

Project

Project Description: [Download](#)

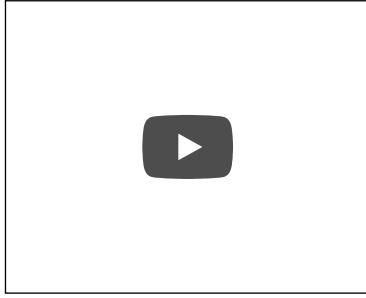
Sample 1: [What Causes Retweets?](#)
Sample 2: [Purchasing Lemons at an Auction](#)
Sample 3: [Factors Driving GDP Growth](#)
Sample 4: [Finding Happiness](#)
Sample 5: [Donor Trends for a Non-Profit Organization](#)
Sample 6: [Breaking Vegas](#)
Sample 7: Analyzing Biochemical Properties to Grade Wine Quality
Sample 8: [Superball Predictions](#)
Sample 9: [How Could High School Prospects Increase their Chances at NFL Success?](#)
Sample 10: Analysis of Determinants of Peer-to-Peer Loan Default
Sample 11: [SPAM Classification](#)

Book

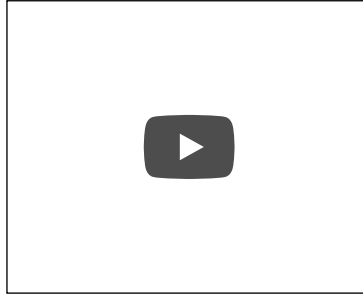
"An Introduction to Statistical Learning with Applications in R" by James, Witten, Hastie, and Tibshirani.

[Book Webpage](#) [Datasets](#) [R Lab Code](#) [ISLR R Package](#)

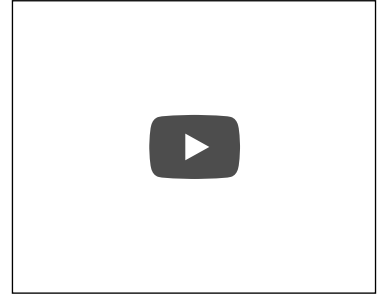
R Video Casts



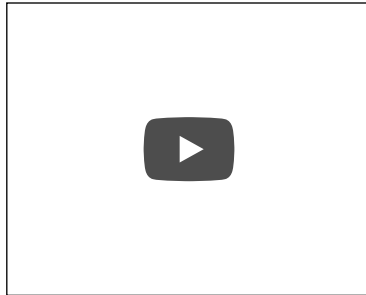
Introduction to R



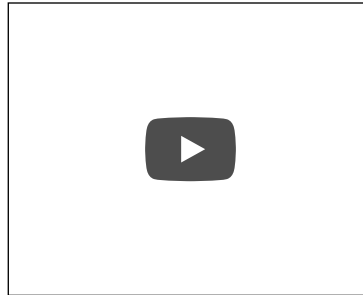
Writing R Functions



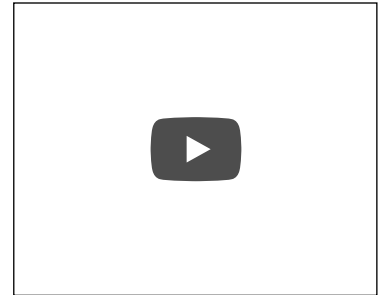
Linear Regression in R



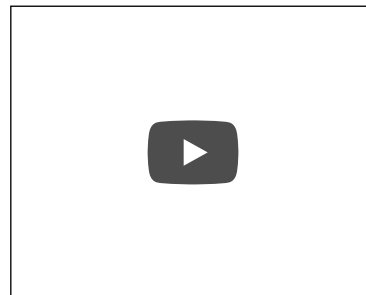
Logistic Regression in R



LDA, QDA, and KNN in R



Cross Validation in R



Decision Trees in R (Classification)



Decision Trees in R (Regression)



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