Statistics 452: Introduction to Statistical Learning

Spring 2020

Prof. Suess, Department of Statistics and Biostatistics, CSU East Bay

Lecture:

• Section 1: MW 6:30 to 7:45, NSc 104

Intructor: Prof. Eric A. Suess Office: NSc 319 Phone: 510-885-3879 e-mail: eric.suess@csueastbay.edu

Office Hours: MW 2 to 3pm, or by appointment

Class Website: http://cox.csueastbay.edu/~esuess/stat452/

Required Texts:

- Brett Lantz, Machine Learning with R, Second Edition, PACKT Publishing 2015.
- James, Witten, Hastie, Tibshirani, An Introduction to Statistical Learning, 7th printing, Springer 2015.

Reference Texts:

- Boehmke, Greenwell, Hands-On Machine Learning with R, CRC Press 2019.
- Hastie, Tibshirani, Friedman, The Elements of Statistical Learning, Springer 2009.
- Hastie, Statistical Learning with Sparsity: The Lasso and Generalizations, CRC Press 2016.
- Efron, Tibshirani, Computer Age Statistical Inference, Cambridge, 2016.
- Kuhn, Johnson, Applied Predictive Modeling, Springer 2013.
- Wiley, R Deep Learning Essentials, PACKT Publishing 2016.
- Chollet, with Allaire, Deep Learning with R, Manning Publications 2018.
- Berk, Statistical Learning from a Regression Perspective, Springer 2008.
- Brynjolfsson, McAfee, The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies, W. W. Norton & Company 2014.

Material To Be Covered: In this course we are going to examine Statistical Learning using R. You will have the opportunity to work with and learn from data.

Homework: A list will also be on the website. Homework will be assigned weekly. Homework will be "due" on Mondays, which means you should complete the homework and come to class prepared to ask questions. Homework will be "collected" though Blackboard and needs to be submitted by Wednesday of the week the homework is due.

Quizzes and Exams: Two short quiz, one midterm will be given and the final. You are expected to bring a calculator with you to all exams and your Student I.D. for identification.

Grading:

- Homework 15%
- Quizzes 5%
- Midterm 25%
- Project 30%
- Final 25%

Policy on Make-up Exams: You are expected to take the quizzes and exams at the scheduled times. In case of genuine emergency, illness or hardship, for which you can present written documentation I may agree to arrange for a make-up exam. Make-up exams must always be arranged BEFORE the regular exam is given and always take place AFTER the regular exam. Quizzes may not be made up!

Statistics 452 SLOs

Student Learning Outcomes (SLO's):

Students graduating with an B.S. in Statistics from Cal State East Bay will be able to:

- 1. Apply basic computational skill in descriptive statistics and graphical displays; hypothesis testing and confidence intervals; modeling and error analysis.
- 2. Communicate to others results involving descriptive statistics and graphical displays; hypothesis testing and confidence intervals; modeling and error analysis.
- 3. Analyze data using appropriate statistical computer software and to interpret the results covering descriptive statistics and graphical displays; hypothesis testing and confidence intervals; modeling and erroranalysis.