

Graduate Program in Software**SEIS 763: ML****Assignment #3 (100 points)****Due Date: June 18th**

Write a MatLab (or a programming language of your choice) program with excellent comments to perform **AND** provide answers the following tasks:

1. Use Matlab command “load **patients**” to load patient self evaluation dataset.
2. If you use other programming languages or tools, save the data to a file so your tool can read.
3. Use variables **Age, Gender, Height, Weight, Smoker, Location, SelfAssessedHealthStatus** to build a linear regression model to predict the systolic blood pressure.
4. Use **lasso regression** with **10-fold cross-validation** to identify useful predictors. Plot a lasso plot with readable tick labels on the X and Y coordinates in your plot for easy visualization and verification. **Missing clear and readable tick labels in your plot will cost you significant points for this assignment.**
5. Which top **TWO** predictors are you going to select after the lasso analysis?
6. What is the lambda (λ) value you choose in order to select the top two predictors you identified in the last question?
7. What are the θ values for the two selected predictors at the lambda (λ) value you identified in the last question?

Please follow the instructions below to submit your assignment. Otherwise, your assignment won't be graded and *****NO***** points will be given to your assignment.

1. If you use Matlab, please name your MatLab program as **“a3.m”**. (or your programming language extension)
2. Have your non-Matlab program reads in your data from the “U:\tmp” folder.
3. Zip and E-mail the program files and data file (for non-Matlab program) to the instructor at clai@stthomas.edu before the class on the due date.
4. Please submit a hardcopy on the due date to the instructor. Your hardcopy should include (1) your programming solutions (with excellent comments) *****AND***** (2) **a clear and readable screenshot** of your answer for *****EACH***** question. Please also staple all pages of your submission together!!! Instructor is not responsible for missing pages if your submission is not stapled together.