Rensselaer

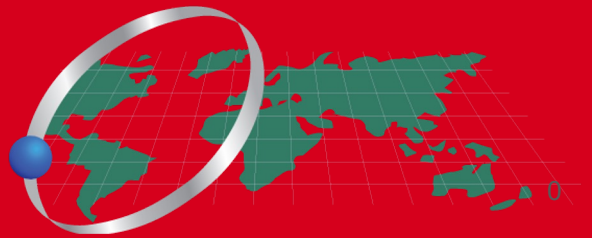
why not change the world?®

# Lab exercises: Support Vector Machines


## Ahmed Eleish


## ITWS-4600/ITWS-6600/MATP-4450/CSCI-4960 Lab 5, March 21st, 2025


Tetherless World Constellation
Rensselaer Polytechnic Institute

# Lab 5


https://archive.ics.uci.edu/dataset/109/wine

https://rpi.box.com/s/o0v1ioapmpe42k622shhyf20f5ijf8k2

# Support Vector Machine Classification

Using the wine dataset:

- Train 2 SVM classifiers to predict the type of wine using a subset of the other 13 variables. You may choose the subset based on previous analysis. One using a linear kernel and another of your choice.
    - Use tune.svm to find the optimum C and gamma values.
- Choose another classification method (kNN, NaiveBayes, etc.) and train a classifier based on the same features.
- Compare the performance of the 2 models (Precision, Recall, F1)

# Support Vector Machine Regression

Using the NY housing dataset:

- Train a SVM regression model to predict PRICE based on Square Footage and plot predicted price vs. real price.
- Train a linear model using the same formula and plot predicted price vs. real price.
- Compare the residual plots of both models.

Please push to your github repository:

1. All your code in a *.R or *.MD file

Thanks!
Have a great weekend!