

**CSc 59929**  
**Introduction to Machine Learning**  
**Assignments for Week 5**  
**Due October 3 by 10:59 AM**

- **Compete the programming exercise described on the following charts.**

# Programming Exercise

- Upon further reflection, we'll be postponing the curve fitting exercise for a week; I need to improve the code we ran together in class before I make it available to you.

# Programming Exercise

- Using the Iris dataset, use all three classes at once.
- Using the Scikit-Learn Library train the Logistic Regression model using the following
  - All six cases of using two features at a time.
  - All four cases of using three features at a time.
  - The one case of using all features at once.

# Programming Exercise

- Summarize your results (i.e, what' s the best accuracy you can obtain for each of the 11 cases you considered, how many iterations does it take to converge, anything else you think is relevant and important) in a table.
- If you have the time (and for additional credit) play with both L1 and L2 regularization and vary the regularization parameter  $C$ .
- Discuss your findings. Does using more dimensions help when trying to classify the data in this dataset? How important is regularization in these cases?