## Lecture 5: Support Vector Machines for Classification Ryan Rifkin

## Description

We derive SVMs from a geometric perspective as well as the regularization perspective. Optimality and duality is introduced to demonstrate how large SVMs can be solved. A comparison is made between SVMs and RLSC. We introduce Regularized Least Squares regression and classification.

## **Suggested Reading**

- Rifkin. Everything Old Is New Again: A Fresh Look at Historical Approaches in Machine Learning. MIT Ph.D. Thesis, 2002. <
- Evgeniou, Pontil and Poggio. **Regularization Networks and Support Vector Machines** Advances in Computational Mathematics, 2000.
- V. N. Vapnik. The Nature of Statistical Learning Theory. Springer, 1995.