Pattern Recognition

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Grading Scheme

Subject to change.

Weekly Assignment	30 %
Fun Project	10 %
Midterm	30 %
Final	30 %

Goal

The class covers many machine learning algorithm with emphasis on supervised learning. As the main goal of this class is to develop you intuition on how to build a classification system. Knowing the exact formula/algorithm is much less important than gaining the intuition. Keep this in mind when you do exercise in class. Think along, make a lot of alternative guess(why not this? what's wrong with that?), comes up with a lot of ideas(how about this?), and ask tons of questions.

Suggested Resources

Books: Pattern Recognition and Machine Learning By Bishop, Learning from Data by Yaser S. Abu-Mostafa

Online Resources: Scikit Learn Documentation is a good start. Andrew Ng Coursera is also a very good one. Or Search youtube for Caltech ML course.

Canvas

This course will utilize canvas. Make sure you sign up and enroll before the end of the first week at `https://canvas.instructure.com/enroll/37G9JT`.

Tentative Schedule

Week 1	Basic Tools & Naive Bayes
Week 2	Gradient Descent & Linear Regression
Week 3	Logistic Regression & Nearest Neighborhood
Week 4	Generalization & Regularization
Week 5	Model Selections & Cross Validation
Week 6	Midterm
Week 7	Multiclass Problem
Week 8	Clustering Problem
Week 9	SVM
Week 10	SVM
Week 11	Collaborative Filtering
Week 12	Collaborative Filtering