# 10707: Final Project

## 1 General Guidelines

- The goal of the final project is to get experience trying to do a piece of original research in machine learning and coherently writing up your results in a paper style format.

- What we expect: a simple but original idea that you describe clearly, relate to existing methods, implement and test on a small scale problem, or present theoretical analysis (if you prefer) of the proposed approach.

- To accomplish this will need to formulate the problem, write some basic code, run it on some data, read a few background papers, collect some references, and write a few pages describing your model, results, analysis.

## 2 Specific Requirements

- Your project must implement one or more machine learning algorithms and apply them to some data, or investigate the proposed approach theoretically. Your project may be a comparison of several existing algorithms, or it may propose a new algorithm in which case you must compare it to at least one other approach.

- Your submission may include figures/tables which graphically illustrate quantitative aspects of your results, such as training/testing error curves, learned parameters, algorithm outputs, etc.

- Your submission must include at least 5 references to previous published papers or book sections. Please include page numbers for all references to indicate that you actually looked at the paper you are referencing.

- Your submission should follow the generally accepted style of paper writing: include an introduction section to motivate your problem and model, a section describing your approach and how it compares to previous work, a section outlining the experiments you ran and the results you obtained, or outlining theoretical analysis of the proposed model, and a short conclusions section to sum up what you have discovered.

- Your submission must be prepared in the NIPS paper style, and must be no longer than 8 pages in length, including all figures, tables, references, etc.

## 3 Marking Scheme

- The following criteria will be taken into account roughly equally when marking:

    1. Clarity of problem statement and description of approach.
    2. Discussion of relationship to previous work and references.
    3. Design and execution of experiments, or presentation of theoretical analysis of the proposed approach.

## 4 Additional Advice

- Be honest, as you are not being marked on how good the results are. What matters is that you clearly formulate the problem, describe your method, what you did, and what the results were.

- Do not pick a project that is to hard. Usually, if you select a modest approach to try, and do it carefully, it will take much longer than you think.

- Be carefull not to do foolish things like test on your training data, set parameters by cheating, compare unfairly against other methods, include plots with unlabeled axes, use undefined symbols in equations, etc.