ECE-523 Engineering Applications of Machine Learning and Data Analytics
– Final Project Guidelines –

§ Document Description

This document will help you understand project requirements, deadlines, and expectations.

§ Project Requirements

Projects are required for ECE523 graduate students. Undergraduates enrolled in the course have the option to implement a non-research project or the one required by graduate students. Your projects will consist of analysis and design on a relevant *novel* machine learning, using rigorous mathematics to prove properties of the system or to validate design goals, presented in the form of a conference paper. While, you do not need to submit to a conference, you are *highly* encouraged to choose a project that alines with your research area.

§ Project Topics

You are encouraged to begin identifying project topics after Exam 2. Homework problems can be used as a motivation for project assignments, where students expand the scope of a homework assignment, and produce a final project that more completely addresses the homework.

Students are encouraged to discuss ideas for the project with the instructor or their graduate advisor, and are further encouraged to make the project relevant to their research. Examples have been placed on D2L.

§ Tentative Timeline

- February 16, 2018: Project proposal due to the instructor
  - No more than two pages (single column; 12pt font)
  - Who are you working with on the project?
  - What do you want to do? What is the novel component? Why do you think it: (1) will work; and (2) is worthwhile? How will you implement and benchmark the approach (e.g., data sets, Python, Matlab, etc.)?
- April 13, 2018: Project status report. Due on `d2l` by 17:00.
  - No more than two pages (single column; 12pt font), but less than one is fine. You just need to convince me that the wheels haven't fallen off of the metaphorical wagon.
- May 2, 2018: Final submission due to `d2l` by 17:00.

§ Project Documents

The project paper should be a PDF file in NIPS conference format (an example template is provided on D2L). You are not limited to a page length; however, you should try to be concise and at the same time not over the top. That is to say, write the manuscript as if you were writing it for a conference or journal. If simulations, data analysis, plots, etc., are part of the project, these documents should be included in the final submission. If more than one file must be submitted they must be zipped, as only a single `.zip` or `.tgz` file can be submitted. The final submission must be done through `d2l`. *Late submission of the project will result in a 0 grade for the project.* Note that it is possible to "overwrite" the previous `d2l` submission for the project, so you may submit a final version while refining your prose or documents.

I have posted an example final project report for Detection & Estimation when I was in graduate school. Feel free to use this as a boost of encouragement.