Mini Course Project, ELEC 602 / COMP 602
Neural Machine Learning II.

A small, focused project will be done over an approximately two-week period at the end of the semester. Projects will be presented in the last class period.

Project reports will be due on the last day of classes, in electronic form. An electronic copy of both presentation and write-up will also have to turned in. Exact scheduling and other details will be discussed in class in a timely manner.

Characteristics of a Successful Project

1. It will be an implementation / examination of some particular aspect of a neural network algorithm, or it will show the application of an algorithm on a particular problem.
2. It will be demonstrated as working, via printouts, tabulated results, listing of code, description and discussion of results, etc.
3. It will be written up in a report that shows professional level of technical thoroughness, writing style, grammar and neatness.
4. It will be presented in a brief, approximately 15-minute, talk.

Project Proposals

Short (approx. 1-page) project proposals will be submitted on or around November 10, and will have the following ingredients:

- Statement of Problem: a brief one-paragraph statement indicating what the problem is that you propose to implement or demonstrate.
- Objectives: a brief statement of what you expect to achieve in relation to the Statement of Problem, e.g., a working algorithm, a demonstrated classification of data, model fitting, information discovery, etc.
- Technical Approach: a brief outline of the methods that you will employ to achieve the Objectives, including description of the data that you plan to use.

Project Report

The Project Report should have the following format:

- Statement of Problem – as in the Project Proposal.
- Objectives – as in the Project Proposal.
- Technical Approach – as in the Project Proposal, but expanded as necessary to provide enough details to understand the actual processing steps.
- Results – substantiation and discussion of the results achieved, in comparison to the initial objectives, insight drawn.
- Appendices – pertinent supporting material, such as code; and optional items, e.g., data (if not one used in class); proofs; extra plots, web links, etc., as applicable and as you feel necessary.

The length of the Project Report should be whatever is *necessary* to fully and professionally document your effort. (Plan on 5 – 10 pages.) It should be submitted as a pdf.

Project Presentation

Projects will be presented to in 15–minute time slots. Slides made in a commonly used format (PowerPoint, beamer) can be used.

Deliverables

An electronic copy of both the Project Report and the Project Presentation will be submitted by the last day of classes.

Project Grade

The project grade will be composed of the technical merit, the quality of the presentation, and the quality of the written report, with 50% and 50% weights for both the presentation and the report. Within each category, the break down will be according to the following:

1. Technical merit (75%)
    a. Clear communication of the problem, clear statement of the research question(s)
    b. Clear communication of the approach, method
    c. Correctness of the approach, the execution of the approach, and the results
    d. Clarity of communication of the results
    e. Analysis of the results (discussion of the meaning, achievement, scope, limits; or demonstration of understanding why the approach did not work)
2. Quality of visuals (for presentation) or writing (for report) (25%), including
    a. Quality of figures
    b. Esthetic arrangement
    c. Correct credits and references
    d. Necessary length
    e. Correct use of English (including speaking style for presentation)