

Course Project Information

What we expect from the course project:

- Pick a topic of interest
- Read relevant/key results in the literature on this topic; you may focus on a single deep paper if you prefer
- Summarize these key results, as well as the theoretical analysis (with proof sketches/outlines)
- Implement some of the main methods, and provide numerical experiments on simulated or real data.
- Developing new methods or theory is not required, but you may of course do so if you prefer.

You will provide: (a) a proposal, (b) a progress report and (c) and final report.

You may work by yourself or in teams of two.

Project Proposal

Length: one page; Due: February 26.

It should contain the following information: (1) project title, (2) team members, (3) precise description of the problem you are studying, (4) what you intend to do for the project, and (5) reading list i.e. papers you will need to read.

Project Progress Report

Length: three pages; Due: April 9.

It should include: (1) introduction, (2) what have you done so far, (3) what remains to be done, and (4) a clear description of the division of work among teammates, if applicable.

Project Final Report

Length: 8 pages (excluding references; no appendix allowed) in NIPS format; Due: May 7.

It should include: (1) introduction, with motivation and a quick summary of the area, (2) notation and assumptions, (3) key results, (4) proof sketches of the results, (5) experimental results (on simulated/real data), (6) conclusion, and (7) references.

Grading Criterion

Project proposal: 1%

Project progress report: 3%

Project final report: 16%

Total Project: 20%

Your final project report will be evaluated based on several factors:

1. Creativity: A project providing new insights into existing methods, or which explore new ideas (methods, combination of methods, theory).
2. Completeness: The extensiveness of the literature study, and analysis of results.
3. Clarity of writing: The report should be organized clearly and well written. Too many grammatical errors will make it hard to understand, and will cost you points.
4. Structure: See the section below for more details
5. NIPS format: Use NIPS format for all your reports.
6. Length: The page limits are strict! Don't exceed the 8 page limit, excluding references. No appendix allowed.

Final Report Structure

1. Title, Authors (Including Andrew IDs)
2. Introduction (15%): What is the topic/area trying to solve, and why is it important?
3. Notation and Assumptions (5%)
4. Key Results (15%)
5. Proof Sketches for the results (30%)
6. Experimental Results (on simulated/real data) (15%)
7. Conclusion (5%): discuss the meaning of the results and open questions.
8. References and citations (5%): Clean and correctly formatted citations and bibliography.