Project Guidelines

The final project is an integral part of this course. There is no better way to learn graphical models than by applying them to a research questions of your own. You have a lot of freedom in choosing a topic for your final project. The only criterion is that it deeply involves the concepts (or extensions of them) that we are discussing in class. We emphasize that we expect you to choose your topic.

From past offerings of the class, most projects involve applying graphical models to a real-world problem. You choose a data set, an interesting question about it (e.g., from your research), and address it with probabilistic modeling.

There have occasionally been other types of projects. Some projects are algorithmic, developing a new inference algorithm for a class of probabilistic models and studying the new algorithm empirically compared to previous methods. Others are theoretical, involving theoretical research such as understanding new properties of a class of probabilistic models. Some projects blend algorithmic, theoretical, and applied ideas.

You may work in pairs. But we expect a project completed by two people to represent the work of two people. We grade accordingly.

Important Dates and Assignments

- Project Proposal: 11/09/15

- Project Milestone: 11/23/15

- Project Report: 12/14/15

For all these assignments, use the latex template provided on the website.

Project Proposal

The project proposal is an abstract summarizing your planned project. We understand that your project is likely to evolve while you work on it. Writing an abstract early in the process is a great way to plan a research project and to help put it into perspective.

You might want to refer to computer science conferences (such as *Neural Information Processing Systems* and *International Conference of Machine Learning*) or journals (such as *The Annals of Applied Statistics*, *Journal of the American Statistical Association*, *Journal of Machine Learning Research*) to get a sense of how to write an abstract.

(Note: We do not grade the project proposal.)

Project Milestone

The project milestone describes the problem you are addressing and discusses some preliminary results. Include a list of what you have completed and what you plan to finish by the end of the semester.

The project milestone is 1–3 pages long (not including figures). It is graded.

Project Report

The project report is due at the end of the semester. The report is up to 5 pages long (not including figures.) Further, you can include a set of appendices (of any length) to which you can banish any details. (Note: We may not read the appendix when grading your work.) We encourage you to put source code online and open source, but do not hand in hard copies of source code.

Project Evaluation

We evaluate the project on the following criteria: ambition, originality, technical depth, rigor, and writing quality.