Syllabus for STAT 598L: Probabilistic Graphical Models

September 22, 2009

Course Number: STAT 59800 Section 013 (37883)

Lectures: Monday, Wednesday, and Friday, 11:30am-12:20pm at 302 Recitation Building


Course Webpage: http://www.stat.purdue.edu/~skirshne/teaching/STAT598L

Instructor: Sergey Kirshner, email skirshne@purdue.edu

Office Hours: Monday 2:30-3:30pm in HAAS 118 or by appointment

Course Description

Probabilistic graphical models provide a convenient framework for modeling of joint distributions by utilizing graphs to represent the dependence among the variables. The course introduces several such frameworks, including Bayesian (belief) networks, Markov random fields, and covers topics related to representation, exact and approximate inference, and parameter and structure estimation in models for high-dimensional data.

Prerequisites

Basic course on probability (e.g., STAT 416/516); course in linear algebra recommended; programming experience recommended (e.g., STAT 598G); or consent of instructor

Format

Essential course material will be presented in lectures over roughly the first two-thirds of the semester. The remaining time will be devoted to additional topics (presented either by the instructor or the students) and to student project presentations.

Evaluation

Your performance will be evaluated based on bi-weekly homeworks, midterm, project, and course participation.

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Percent of the grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>25%</td>
</tr>
<tr>
<td>Midterm</td>
<td>25%</td>
</tr>
<tr>
<td>Project</td>
<td>40%</td>
</tr>
<tr>
<td>Class participation</td>
<td>10%</td>
</tr>
<tr>
<td>Total:</td>
<td>100%</td>
</tr>
</tbody>
</table>
Policies

This course is an elective taught in a small-size class setting. Your active class participation is not only encouraged, it is essential. You are also encouraged to discuss the material with your classmates outside of lectures to enhance your understanding of the subject. You are allowed to discuss the homework assignments with your classmates as long as no written (or typed) notes are taken. However, your submitted homework assignments should be your own work.

Homeworks will be collected at the beginning of class on their due dates. No late homeworks will be accepted.

Depending on the size of the class, the project will be performed either individually or in a group of two. You will be able to choose from among the topics suggested by the instructor to come up with your own with instructor’s approval. Your are encouraged to discuss your projects with the instructor. If done by a group, the proposed work has to be clearly divided between the participants, and the write-up should outline the contribution of each participant.

In the event of a major campus emergency, course requirements, deadlines, and grading percentages (points) are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor’s control. The information about the changes in this course will be announced on the course’s webpage, over email, and in class (whenever possible).

Cheating and plagiarizing will not be tolerated. If caught, your punishment may range from a score of zero on an assignment to a failing grade in the course with a referral to the University disciplinary committee. (See regulations for student conduct, http://www.purdue.edu/univregs/pages/stu_conduct/stu_regulations.html) Please don’t resort to cheating; if you are having trouble in the course, please talk to the instructor (me), and I may be able to direct you to additional resources.

Finally,

I hope you enjoy the course. If you have comments or suggestions, I want to hear them. Please drop me a line or just stop by.