ECEN 689: Advanced Probabilistic Graphical Models

Course Description and Prerequisites

Advanced Probabilistic Graphical Models: This is a graduate-level course on probabilistic graphical models, including Bayesian networks, Markov networks, conditional random fields, and factor graphs. This course will focus on techniques for learning graphical models and their application to various problems across science and engineering.

Learning Outcomes or Course Objectives

Upon successful completion of the course, the student will have a good understanding of various probabilistic graphical models and techniques for learning the structure and estimating the parameters of such models.

Instructor Information

Name: Byung-Jun Yoon
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Office hours: TBD
Office location: Zachry 216G

Textbook and/or Resource Material


Grading Policies

Grade assignment and weighting:
Assignments: 30%
Midterm exam: 25%
Final class project: 45%

Late assignment submission:
20% penalty per day (tentative)

Attendance:
“The University views class attendance as the responsibility of an individual student. Attendance is essential to complete the course successfully. University rules related to excused and unexcused absences are located on-line at http://student-rules.tamu.edu/rule07.”

Letter Grading Scale (will be adjusted according to student performance distribution):
A = 85-100
B = 75-84
C = 70-74
D = 60-69
F = <60
Course Topics, Calendar of Activities, Major Assignment Dates

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<th>Topic</th>
<th>Required Reading</th>
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<td>Introduction</td>
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<td>1-2</td>
<td>Review: Probabilistic Graphical Models</td>
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<td>2-3</td>
<td>Review: Inference Algorithms</td>
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<td>4-5</td>
<td>Learning Graphical Models: Overview</td>
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<td>6-7</td>
<td>Parameter Estimation</td>
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<td>8-9</td>
<td>Structure Learning: Directed Models</td>
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<td>Structure Learning: Undirected Models</td>
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<td>Learning Based on Partial Data</td>
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<td>Applications</td>
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<td>Final Project Presentation</td>
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Americans with Disabilities Act (ADA)
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For additional information visit [http://disability.tamu.edu](http://disability.tamu.edu)

Academic Integrity

For additional information please visit: [http://www.tamu.edu/aggiehonor](http://www.tamu.edu/aggiehonor)

“An Aggie does not lie, cheat, or steal, or tolerate those who do.”

Students are expected to attend all classes, complete assignments on time, and participate fully in class discussions and group projects. Violations will be handled in accordance with the Texas A&M University Regulations governing academic integrity.