ComS 673 Advanced Topics in Computational Intelligence
-Probabilistic Graphical Models
Spring 2014

Meeting time: T R 12:40pm-2:00pm
Instructor: Jin Tian

Topics

The course is intended to be an advanced topics course on state-of-the-art learning methods in probabilistic models. The potential topics include Bayesian networks, Markov random fields, conditional random fields, hidden Markov models, probabilistic relational models, sparse Gaussian graphical models, deep belief networks, probabilistic topic models such as Latent Dirichlet allocation (LDA) models, nonparametric Bayesian models, and the applications of these probabilistic models in computational biology, text/image processing, social networks, and so on. The purpose is to expose students to the state-of-the-art methods and applications in a variety of domains and to prepare students for doing research in the area.

Course Materials

Online research papers, tutorials, and the following books as reference book


Course Organization

The course involves the instructor's lectures and student presentations. Each student will be responsible for giving lecture on a selected topic. The actual topics will likely depend on the background and interests of the course participants.

Term Project

Students are required to complete a group or individual research project. An oral presentation of the project is expected at the end of the semester. You are encouraged to pick a topic that would apply machine learning methods in your research area.

Evaluation

Grades will be based on class participation, the quality of topic oral presentations, and term project.

For more information, contact Jin Tian (jtian@iastate.edu)