CS583: Probabilistic Graphical Models

Objectives

Successful students will be able to

• Represent various prediction and knowledge discovery tasks using directed, undirected, and factor graphs
• Perform inference to answer various types of probabilistic queries
• Learn a graphical model (parameters and structure) from data

Prerequisites

• None required. CS480 and knowledge of probability and statistics are recommended.

Syllabus

• Introduction
• Bayesian networks
• Markov networks
• Factor graphs
• Variable elimination
• Belief propagation
• Approximate inference
• Parameter estimation
• Structure learning
• Hidden Markov models
• Statistical relational learning