CS592 Special Topics in Computing

Advanced machine learning: High-Dimensional Data Analysis and Graphical Models

Spring 2019

Course Description

This is a grad-level seminar course in machine learning. We will survey and discuss recent machine learning papers handling high dimensional data (the complete paper list will be announced soon; most papers will be related to sparse learning/graphical models/variational inference/Gaussian process; only small number of applied papers with less mathematics might be considered if necessary). The main goal of this course is to understand recent machine learning approaches by reading and presenting papers from prestigious conferences/journals, and to find the possible future research directions.

Students will be responsible for making presentations (which will probably be highly mathematical papers; not deep learning application papers), participating in discussions, and writing paper critiques every week. For active discussions, all students are required to read all papers in the paper presentation list (again this paper list will be announced soon.) The number of presentations for each student will depend on the number of enrollment.

Time and Place

Monday and Wednesday 2:30PM—3:45PM
N1, 422

Instructor

Professor Eunho Yang
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N1, 802

Teaching Assistant

TBA

Textbook

There is no required text for this course. Some useful materials (notes/papers/book chapters) will be introduced in the course if any.

Prerequisites

(Strict requirement) Undergrad-level course in machine learning, or similar; Ability to read and understand papers in this area.
Some knowledges in sparse learning/graphical models/variational inference (optional but students should be familiar with these topics throughout the semester)

Grading

- Presentations: 20%
- Paper critiques: 30%
- In-class discussion: 40%
- Attendance: 10%

Policy

Unless a President's excuse is received, no late project/assignment will be accepted for credit.

Plagiarism will not be tolerated by University rules.