STAT 991: Topics in Modern Statistical Learning

Department of Statistics & Data Science, The Wharton School, University of Pennsylvania,
Spring 2022

Time:	Tue/Thu 15:30pm-17:00pm	**Place:**	Zoom/Huntsman F50

Objectives: This advanced seminar course will explore topics in modern statistical learning. We will discuss both theory and applications.

Students will present topics over one or more lectures. The presentations will summarize either the basic foundations of the area or the work of several research papers on a topic. They will include necessary background, algorithms, in-class code demonstrations, as well as results and proofs (in case of theory). Finally, the goal of the course will also be to identity new research directions.

I am hoping that this course will provide a venue for discussion for students interesed in modern statistical learning and related areas at Penn.

Course Pages:

1. Canvas for announcements and private materials: https://canvas.upenn.edu/courses/1638253
2. Public class page: https://github.com/dobriban/Topics-In-Modern-Statistical-Learning

Prerequisites: You are expected to have some basic familiarity with statistics, machine learning, and probability theory. (e.g., at the level of STAT 431, CIS 520 and STAT 430). Some parts of the course may require additional background, including advanced probability theory at the level of STAT 930.

Topics: A list of possible topics are discussed on the Github page.

Instructor: Edgar Dobriban, dobriban@wharton.upenn.edu, Office: 305 WARB. Office Hours: by appointment

Feedback: I am interested to hear about your experience and suggestions for the class.

Grading Policy: The course grade will be driven by two factors: presentation (80%), and class participation (20%). The components of each are

- Presentation: Clarity (ability of others to follow). Correctness. Coverage (did you cover the important parts?). Insight.

  Think of the presentation as a course project. You will need to prepare the presentation (slides to be presented in class, or cca 6 pages of lecture notes) and provide it to the class 24

hours in advance. These will be posted on Canvas or Github. You may reuse presentation materials from other sources.

We are aiming that the first student presentations be in the second or third week. There is a Google Sheet where you can sign up. I can guide with choosing topics, literature search, and structuring the presentation.

- Class participation: Attendance, asking questions.