

# Math 705 Spring 2024

**Seminar meets on Mondays 2-3:15 pm in GFS 105**

**Faculty Supervisor:** Sergey Lototsky.

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**Office Hours:** MWF 10:30am-11:30am (in-person and on zoom)

Appointments at other time are welcome.

**The objective this semester:** To discuss that material in the book *The Elements of Statistical Learning* by T. Hastie, R. Tibshirani, and J. Friedman (Second Edition), Springer, 2008.

**Participating students:** Dominic Arcona, Rundong Ding, Benjamin Gillen, Levon Hakobyan, Fang Sun, Farhad De Sousa, Troy Tao, Gaozhan Wang, Jiawei Wang,

## **What we did.**

January 22. Setting the agenda

January 29. Discussion of machine learning and related topics

February 5. Overview of the Hastie-Tibshirani-Friedman book

February 12. Linear regression (Farhad); Classification (Jiawei)

February 19. No meeting (Presidents' Day).

February 26. Supervised Learning (Dom)

March 4. Basis Expansions and Regularization (Levon)

March 11. No meeting (Spring break).

March 18. Model Assessment and Selection (Fang)

March 25. Kernel Smoothing (Farhad); Prototype Methods and Nearest-Neighbors (Ben)

April 1. Neural Networks (Gaozhan)

April 8. Support Vector Machines (Gaozhan); Model inference and averaging (Levon)

April 15. Random Forests (Rundong)

April 22. Levon's practice for the oral exam presentation.