

Homework 2 - due Wed. Feb. 12th

High-Dimensional Approximation, Probability, and Statistical Learning

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Homework Policies

As in the first homework set.

Assignment

Study/review Chapter 1 of R. Vershynin's High-Dimensional Probability lectures notes/book.

Exercises

The exercises below are from the *Foundations of Data Science* lecture notes/book by Kannan et al.; please note that there are different versions of these notes available on the web: the ones I am referring to are the ones linked at on the section of my webpage on this course (linked at just above where you downloaded the homework).

Exercise 1 (20 pts). Exercise 2.28 on page 35.

Exercise 2 (25 pts). Exercise 2.32 on page 35. Also: consider more than 200 points (e.g. 2000), as well as study how this changes with the dimension d .

Exercise 3 (25 pts). Exercise 2.38 on page 37.

The exercises below are from the *High Dimensional Probability* lecture notes/book by R. Vershynin.

Exercise 4 (30 pts). Exercise 2.2.8 on page 17, "Boosting randomized algorithms".