

Day 5 - Reading

Read: In this reading, anytime you see a “subgaussian” random variable, think just about a gaussian random variables. We will learn about subgaussians later.

- Theorem 1.4 and its proof.
- Section 5.1
- Corollary 5.35 (but not its proof)
- Theorem 5.65 and its proof.

Questions:

1. How many Gaussian measurements are necessary to get RIP with high probability?
2. How many Gaussian measurements are sufficient to get RIP with high probability?
3. What is the difference between asymptotic analysis of random matrices and non asymptotic analysis of random matrices?
4. If A is an $N \times n$ matrix with n small and N big, why should the singular values be approximately \sqrt{N} ?
5. What is the gist of the proof of Theorem 5.65? That is, what is a quick way to see that it gives that scaling?