Quiz

SDS 385

1. Is independence of two random variables the same as uncorrelated? If not, what is the difference?

2. What is the difference between clustering and classification?

3. How does the K-nearest neighbor algorithm for classification work?

4. Write down the definition of the largest singular value of a matrix as an optimization problem.

5. Are the eigenvalues and singular values of a symmetric square matrix the same? If not, what is their relationship?

6. If f is convex, and X is a random variable, then how are $f(E[X])$ and $E[f(X)]$ related?

7. Write down the definition of a symmetric positive-semi definite matrix. What do you know about its eigenvalues?