

Read the two articles on SVD posted on CCLE under Reading Assignments. In the Mathews article, you can probably skim some parts of the computation on pages 2-7 since you already know how to compute a determinant. Focus on the later part about compressing an image. In the Martin–Porter article, you’re only required to read the first 6 pages of the PDF. Focus on the applications regarding voting.

Fun fact: Mason Porter was a professor at Oxford at the time of publishing but is now a professor here at UCLA!

1. In the Mathews article, what are modes? How can we use them?
2. Consider Figure 3.1 in the Mathews article involving a pirate. Which choice of mode do you think best balances the clarity of the image and the size of the file? Approximately how much data is required to store the image for this choice?
3. How do the sizes of an image compare between grayscale and color?
4. Consider Figure 1 in the Martin-Porter article. In the context of the article (and in your own words), describe a trend you see in either the first or second graph depicted here.
5. Describe one thing that surprised you about SVD from either of these articles. If nothing surprised you, then pick your favorite part of either article and explain what you liked about it.