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Computer Vision

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Results from PCA

As per expected, the original process of doing PCA within a typical computing environment caused errors for space and was completely unable to run through the program as having a matrix of 10000x10000 was not necessarily a very bright idea. A way to avoid it was simply using ATA trick to create a 10000x40 matrix and eventually getting a 40x40 matrix by getting the eigenvectors of the matrix. Numpy's Linear Algebra set of functions already had a built in SVD function that would return the list of eigenvectors for all the images. The results of running ATA and SVD were both minimal, about .7 seconds a piece. Time was comparable and almost negligible. However, the accuracy of ATA across all 40 images was much higher than SVD. ATA simply had more occurrences of having the correct image within the three matches.