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4/25/16

QEA I Module II Final Project: Outline

1. Executive Summary
   1. Discuss the ubiquitous nature of eigenvalue and eigenvectors, in that they are used in a wide range of fields and ideas that involve data compression or large sets of data
   2. Plan is to compare the performance of an Eigen faces algorithm for facial recognition with other algorithms, such as pixel space and correlation.
   3. Trying to prove the power of Eigen stuff
2. Background and Terminology
   1. Discuss Matrices, LSAE, Applying them to Data
   2. Talk all about Eigen stuff
   3. Explain how facial recognition works
3. Algorithms and Justifications
   1. Talk about Pixel Space Algorithm, what it is and its pros and cons
   2. Talk about Correlation Algorithm, what it is and its pros and cons
   3. Talk about Eigen face Algorithm, what it is, and why we believe it’s superior in performance, and maybe accuracy
4. Comparison of performance
   1. Discuss how accuracy and performance, maybe also the numbers of lines of code play into determining how good an algorithm is. Space could also be a factor.
   2. Compare the performance of the three algorithms with a 344 training dataset and a 43 test set.
   3. Compare the performance of the three algorithms with a 43 training dataset and a 344 test set.
   4. Talk about why the results are what they are
5. Conclusions
   1. Validate/Disprove the power of the eigen stuff
   2. Thinking about eigen stuff and what they mean, talk about defense of assertions about eigen algorithm and the extent to which it was true
   3. Talk about improvements/fallacies in the experiment.
   4. Talk about how to potentially fix lighting/contrast problems, being able to extend this to all kinds of images, not just the class data.
   5. Talk about Fisher faces and what they could potentially do
   6. End with a majestic statement.