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Revision Outline

* Overall
  + More math equations, less text, use math figures to explain rather than with words
  + Interpret Equations and Figures more, what are they, and what do they mean
  + More concise, cut down on text
  + Restructure Intro and Algorithms such that the argument is line with the evidence, and the algorithms and background isn’t so confusing
  + Correct Errors with Eigenstuff/PCA in terms of technical
* Specifically
  + Intro
    - Call it intro
    - Remember the parts
      * Context
      * Contribution
      * Roadmap
      * Insight
    - Make the argument more in line with the evidence
      * Comparing three algorithms, all do well, but eigenfaces is better for larger datasets
      * Context is facial recognition is an interesting problem, examine three diff algorithms for facial recognition and discuss the results
    - Eigenstuff is too informal
    - Remove the part about in the roadmap that get too specific
  + Facial Recognition Approaches
    - Combine the background and algorithms sections into one
    - Sections are:
      * Images as matrices of data and space
      * Challenges: Brightness and Contrast
      * Euclidean Distance
      * Image Correlation
      * EigenFaces ( includes eigenvalues, vectors, PCA, and SVD)
    - Image as matrices of data and space is fine
    - Brightness and Contrast is fine as well
    - Euclidean Distance
      * Describe and interpret the equations and figures more
      * Fix the distance figure to exclude the labels
    - Image Correlation
      * Use more math (mean, standard deviation, and others)
      * Don’t say pair of pixels, say pair of images
      * Equation 2 – don’t use infinity, i is an element of the dataset
      * Statistical trend really vague, use math to explain
      * Look to Pre Day 5 BB for the math
      * Fix the figure with the correlation matrix to include pictures
    - EigenFaces
      * Get the math figured out
      * Explain more with math, not with text
      * Explain how the eigenvectors preserve so much data
      * Explain why they are faster with loss of accuracy
      * Fix the explanation of PCA and SVD with regards to eigenvalues and eigenvectors
      * Eigenvalues and eigenvectors are used in PCA, as tools to find the principle component of data – the pratical application is dimension reduction, which is why it’s so powerful and computationally faster
      * Eigenvalues and eigenvectors can be used in eigendecompsition to find the principal component
      * Talk about basis and spans of vectors in vector space
      * SVD is more similar to EVD than to PCA, they are both used for PCA, but they aren’t similar to it
      * Progression of explanation will be
        + Eigenvalues and Eigenvectors
        + Basis, Span of vectors, linear independence,
        + EVD
        + SVD
        + PCA
        + Why they’re good – dimension reduction
        + Algorithm part
      * EIgenfaces is based on the idea of PCA. PCA is achieved/can be found through EVD/SVD to find the principal eigenvector which is used in dimension reduction
        + Make sure to talk about covariance stuff in PCA and principal eigenvector
    - Performance
      * Make Bar graphs
      * Space – include mathematical equations, make a figure comparing it more quantitatively
    - Conclusion
      * More concise on bottom line
      * Take out math parts
      * Get rid of future work
      * Conclude with majesty