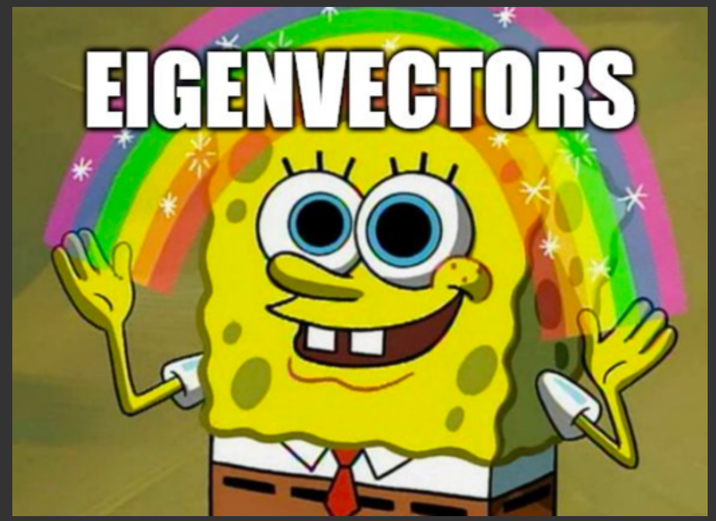
eigenvalue decomposition summarized

- If Q^{-1} exists, then we can write

$$A = QDQ^{-1} \quad \text{eigenvalue decomposition}$$

$$Q^{-1}AQ = D \quad \text{diagonalization of } A$$

- Under what condition would Q^{-1} exist?
  - If the columns of Q are linearly independent
  - i.e. if A has n linearly independent eigenvectors
  - i.e. if A has n distinct eigenvalues



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- If A is symmetric, we get an even more convenient situation
  - The eigenvalues are orthogonal