eigenvalue decomposition summarized

- Let $\vec{v}_1, \vec{v}_2, \ldots, \vec{v}_n$ be the eigenvectors of matrix A and let $\lambda_1, \lambda_2, \ldots, \lambda_n$ be corresponding eigenvalues
- Consider now a matrix Q whose columns are $\vec{v}_1, \vec{v}_2, \ldots, \vec{v}_n$
- We have now

$$AQ = A \begin{bmatrix} | & | & | & | \\ \overrightarrow{v_1} & \overrightarrow{v_2} & \ldots & \overrightarrow{v_1} \\ | & | & | & | \end{bmatrix} = \begin{bmatrix} | & | & | & | \\ A\overrightarrow{v_1} & A\overrightarrow{v_2} & \ldots & A\overrightarrow{v_1} \\ | & | & | & | \end{bmatrix}$$

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