

Lecture 29 |

Q: What is the difference between SVD and EVD on

$$A = A^T, A \succeq 0.$$

Find:-

Why $\begin{bmatrix} O & A \\ A & O \end{bmatrix}$ in the first place? ✓✓

What is μ , σ , λ
 λ -vls of $\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$

$$\begin{bmatrix} 0 & I \\ A^T & 0 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \sigma \begin{bmatrix} x \\ y \end{bmatrix}$$

Do we know $x=y$?

Q5: $x \neq y$ (may not
Ever have same
pairs)

s - Kahn Beding - Why the
Cawson, House, Chini. B. C. C.

Case Golds Katen? ✓

in Matrix: | Gene Golub was

how to get from A figure at

$$A^T \quad \overbrace{QR \text{ an}} \quad [O \quad I]$$

$$\begin{pmatrix} OA \\ A^T O \end{pmatrix} = \frac{1}{\sqrt{2}} \begin{pmatrix} B^T O \end{pmatrix} = C.$$

$$\left. \begin{array}{l} 0 \\ A^T A \end{array} \right\} \quad U^T A V \rightarrow B \quad \begin{array}{l} \text{a bichy} \\ \text{M. for} \end{array}$$

ratio.

Use Double
product
shift at Q_L...

$$\begin{cases} O K \\ A^T \bar{c} \end{cases}$$

As a result, the *Journal of Management Education* is pleased to announce that the 2016 JME Best Article Award will be presented to the authors of the article, "The Effect of the Gender of the Teacher on the Gender of the Student in the Classroom," by David A. Goss, University of North Carolina at Charlotte, and David A. Goss, University of North Carolina at Charlotte.

Ag

$$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \sigma \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} Ay \\ A^T x \end{bmatrix}$$

$$\begin{bmatrix} x \\ -y \end{bmatrix} = \begin{bmatrix} A_y \\ A_x \end{bmatrix} = \begin{bmatrix} -\sigma_x \\ \sigma_y \end{bmatrix} = -\sigma \begin{bmatrix} x \\ -y \end{bmatrix}$$

$$= 0^x$$

$$U \Sigma V^T \Rightarrow AV = U \Sigma$$

$$AV_i = \sigma_i U_i$$

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$$A = A^T, A \succeq 0, \text{ then } \text{EVD} =$$

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ness of SVD.	Gold
$\neq \Phi$ Calligraphic	Calligraphic

u_i, v_i are unique!
Sebastian).

$\Rightarrow 0$ L son pair,
Impaire ri Subspace...

$$= A^T, A \succeq 0, \text{ and } \neq 0; \text{ i.e., the } \sigma\text{-vals of}$$

Sub-Kabam $\Leftrightarrow$ Lanczos for $\mathcal{I}$

- Kuhn gives

y_B
 $f_{A, K+1} = \begin{pmatrix} \alpha_1 \\ \vdots \end{pmatrix}$

$$\begin{bmatrix} x_2 \\ \alpha_k \\ B_{k+1} \end{bmatrix}$$
$$A \cong \sigma \cdot V_6 \neq B_{12}.$$
$$C_{11} = \tilde{U} \tilde{\Sigma} \tilde{U}^T, \quad \therefore A X_{11} = Y_{11}$$
$$\begin{pmatrix} OA \\ IO \end{pmatrix} \int \underbrace{A x_k}_{\text{}} \tilde{v}_k = y_k \tilde{u}_k \quad \Sigma_k$$

$$V_k \quad U_k$$

$$H \cong \bigcup_{k \in K} V_k$$

$$U_k^T A U_k = \Sigma_k.$$

$$u_{K \Sigma_K} v^T)$$