

August
Sunday

2022 ٢٠٢٢

طہس

7

١٧٣٨ مسري

١٤٤٤ هجری

* Week 32 *
label 0

$$\begin{pmatrix} 1 \\ 2 \\ 3 \\ 4 \end{pmatrix} \begin{pmatrix} 2 \\ 3 \\ 4 \\ 5 \end{pmatrix}$$

$$\begin{pmatrix} 1.05 \\ 2.5 \\ 3.5 \\ 4.5 \end{pmatrix}$$

$$\begin{pmatrix} 1 \\ 2 \\ 3 \\ 4 \end{pmatrix} \begin{pmatrix} 2 \\ 3 \\ 4 \\ 5 \end{pmatrix}$$

$$\begin{pmatrix} 10 \\ 11 \\ 12 \\ 13 \end{pmatrix} \begin{pmatrix} 11 \\ 12 \\ 13 \\ 14 \end{pmatrix} \begin{pmatrix} 13 \\ 14 \\ 15 \\ 16 \end{pmatrix}$$

$$\begin{pmatrix} 11.33 \\ 12.33 \\ 13.33 \\ 14.33 \end{pmatrix}$$

$$\begin{pmatrix} 10 \\ 11 \\ 12 \\ 13 \end{pmatrix} \begin{pmatrix} 11 \\ 12 \\ 13 \\ 14 \end{pmatrix} \begin{pmatrix} 13 \\ 14 \\ 15 \\ 16 \end{pmatrix}$$

8

9

label 1

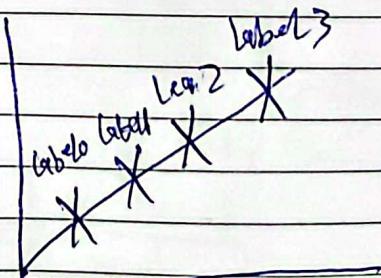
$$\begin{pmatrix} u \\ v \\ w \end{pmatrix} \begin{pmatrix} 5 \\ 6 \\ 7 \\ 8 \end{pmatrix}$$

$$\begin{pmatrix} 4.5 \\ 5.5 \\ 6.5 \\ 7.5 \end{pmatrix}$$

$$\begin{pmatrix} 4 \\ 5 \\ 6 \\ 7 \end{pmatrix} \begin{pmatrix} 5 \\ 6 \\ 7 \\ 8 \end{pmatrix}$$

$$\begin{pmatrix} 7 \\ 8 \\ 9 \\ 10 \end{pmatrix} \begin{pmatrix} 8 \\ 9 \\ 10 \\ 11 \end{pmatrix}$$

f₂



label 2

$$\begin{pmatrix} 7 \\ 8 \\ 9 \\ 10 \end{pmatrix} \begin{pmatrix} 8 \\ 9 \\ 10 \\ 11 \end{pmatrix}$$

$$\begin{pmatrix} 7.5 \\ 8.5 \\ 9.5 \\ 10.5 \end{pmatrix}$$

August	S	S	M	T	W	T	F	S	S	M	T	W	T	F
	13	14	15	16	17	18	19	20	21	22	23	24	25	26
	27	28	29	30	31									



August

Saturday

6

2022 ٢٠٢٢

٢٠ أبیب ١٤٣٨ق

٨ محرم ١٤٤٤هـ

أغسطس

السبت

٦

* Week 32 *

(218 - 147)

$$\text{Retained} = 100 - 0 = 100\%$$

~~$$OR = \frac{2.16}{2.16 + 2.00} = 100\%$$~~

~~$$\begin{bmatrix} 2 \\ 8 \end{bmatrix} \begin{bmatrix} 6 \\ 9 \end{bmatrix}$$~~

~~$$\begin{bmatrix} 7 \\ 8 \\ 9 \\ 10 \end{bmatrix}$$~~

~~$$\begin{array}{c} 5 \\ 6 \\ 7 \\ 8 \end{array} \begin{array}{c} 1 \\ 2 \\ 3 \\ 4 \end{array} \begin{array}{c} 2 \\ 3 \\ 4 \\ 5 \end{array} \begin{array}{c} 11 \\ 5 \\ 6 \end{array}$$~~

~~$$\begin{array}{c} 8 \\ 9 \\ 10 \\ 11 \\ 12 \end{array} \begin{array}{c} 7 \\ 8 \\ 9 \\ 10 \\ 11 \end{array} \begin{array}{c} 10 \\ 11 \\ 12 \\ 13 \\ 14 \end{array} \begin{array}{c} 11 \\ 12 \\ 13 \\ 14 \end{array}$$~~

~~$$\begin{array}{c} 3 \\ 4 \\ 5 \\ 6 \end{array}$$~~

~~Mean
$$\begin{bmatrix} 6.78 \\ 7.78 \\ 8.78 \\ 9.78 \end{bmatrix}$$~~

~~$$\begin{array}{c} 9.8 \\ 10.8 \\ 11.8 \\ 12.8 \end{array}$$~~

~~$$\begin{bmatrix} 2 \\ 3 \end{bmatrix} \begin{bmatrix} 4 \\ 5 \end{bmatrix} \begin{bmatrix} 6 \\ 7 \end{bmatrix}$$~~

~~$$\begin{array}{c} \text{Cable 2} \\ \begin{bmatrix} 9 \\ 10 \\ 11 \\ 12 \end{bmatrix} \end{array} \quad \begin{array}{c} \text{Cable 3} \\ \begin{bmatrix} 10 \\ 11 \\ 12 \\ 13 \end{bmatrix} \end{array}$$~~

~~$$5$$~~

~~$$6$$~~

~~$$7$$~~

~~$$8$$~~

~~$$9$$~~



السبت	الاحد	الاثنين	الثلاثاء	الاربعاء	الخميس	الجمعة
١	٢	٣	٤	٥	٦	٧

١٢ ١١ ١٠ ٩ ٨ ٧ ٦

August

Wednesday

2022 ٢٠٢٢

الاربعاء
أغسطس

3

٢٧ أب ١٤٣٨ هـ

٥ محرم ١٤٤٤ هـ

٣

* Week 31 *

(215 - 15)

$$\begin{bmatrix} 2 & 1 & 6 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{bmatrix} \quad x_1 = \begin{bmatrix} 1 \\ 0 \\ 0 \end{bmatrix}$$

Length = 1

eigenVectors Are Normalized

$$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix} = M = M^T$$

$$y - \bar{M} \cdot 6 = [2, 2; 1, 2; -0.8, -0.8, 1.0]$$

Eigen Vectors are Normalized

y is zero mean

cov y is equivalent to diagonal matrix

~~(1 - 1) because it is one-dimension~~

$$\text{lost info \%} = \frac{0+0}{0+0+2.16} = 0$$

15

S

S

M

T

W

T

F

S

S

M

T

W

T

F

S

12



August

Tuesday

2022 ٢٠٢٢

أغسطس

الثلاثاء

2

٢٦ أبیب ١٤٣٨

٤ محرم ١٤٤٤

٢

* Week 31 *

$$\begin{bmatrix} 5 + 4 + 2 + 2 + 1 \end{bmatrix}$$

(214 - 151)

$$8 \text{ Mean} = \frac{\begin{bmatrix} 0 + 0 + 0 + 0 + 0 \end{bmatrix}}{\begin{bmatrix} 5 \end{bmatrix}} = \begin{bmatrix} 0 \end{bmatrix}$$

$$10 \quad \frac{1}{5} \begin{bmatrix} 14 \\ 0 \\ 0 \end{bmatrix} = \begin{bmatrix} 2.8 \\ 0 \\ 0 \end{bmatrix}$$

$$11 \quad \begin{bmatrix} 2.2 & 1.2 & 0.8 & 1.8 \end{bmatrix}^T$$

$$12 \quad \text{zero - Mean} = \begin{bmatrix} 0 & 0 & 0 & 0 \end{bmatrix}$$

$$1 \quad \overline{\frac{1}{N} \sigma \sigma^T} = \text{cov matrix}$$

$$2 \quad = \begin{bmatrix} 2.16 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

3
4 Eigen Value are The diagonal

5 $\lambda = 2.16, 0, 0$

6 $x_2, x_3 \rightarrow$ are Free Variables

$$7 \quad x_2 \begin{bmatrix} 0 \\ 1 \\ 0 \end{bmatrix} + x_3 \begin{bmatrix} 0 \\ 0 \\ 1 \end{bmatrix}$$

9