# Linear Algebra

## 1-Determinant

## 2-Inverse

## 3-Eigenvalues and Eigenvectors

## 4-Solving Linear equations using np.linalg.solve

## 5-SVD: Singular Value Decomposition

## 6-Decompositions (other)

Y = mx + b

Y= 5x + 8

Y = mx + m2z + b

**X + Y + Z = 3**

**2x + 3y + 3z = 8**

**X + 2Y – Z = 5**

[1 1 1] [3]

[2 3 3] [8]

[1 2 -1] [5]

[[ 1, 1, 1],

[2, 3, 3],

[1, 2, -1]]

Determinant

[3, 8, 5]

**X + Y + Z = 3**

2x + 2y +2z = 6

**X + Y + Z = 7**

**If Det = 0 :: no solution, infinite solution**

**Determinante != 0**

**For any equation or matrix Determinant will be the same.**