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Experment no 1: Group 4 :

Example 3 (Matrix Equations)

import numpy as np

from numpy import linalg as LA

# Input section matrix

M1 = np.array([[1,2],[5,8]])

M2 = np.array([[-1,1],[1,2]])

# Output section matrix

# Matrix Addition

print("[M1]+[M2]=",M1+M2)

# Matrix Subtraction

print("[M1]-[M2]=",M1-M2)

# Matrix Multiplication

print("[M1][M2]=",M1.dot(M2))

# Matrix Transpose

print("Transpose of [M1]=",M1.transpose())

# Matrix Inverse

print("Inverse of [M1]=",np.linalg.inv(M1))

# Matrix Eigen Values and Vectors

w, v = LA.eig(np.array(M1))

print("Eigen Values of [M1]=",w)

print("Eigen Vectors of [M1]=",v)

Output Section:

[M1]+[M2]= [[ 0 3]

[ 6 10]]

[M1]-[M2]= [[2 1]

[4 6]]

[M1][M2]= [[ 1 5]

[ 3 21]]

Transpose of [M1]= [[1 5]

[2 8]]

Inverse of [M1]= [[-4. 1. ]

[ 2.5 -0.5]]

Eigen Values of [M1]= [-0.21699057 9.21699057]

Eigen Vectors of [M1]= [[-0.85427457 -0.23649365]

[ 0.51982205 -0.97163304]]