Computing Tools

Lab 8

Topics : Numpy

1. Create a random vector of size 1000 and find the mean and variance
2. Create two 2 X 2 matrices - [[1,2],[3,4]] and [[6,7],[8,9]]
   1. find the dot product of the two
   2. find the transpose of the first matrix
   3. find the inverse of the first matrix
   4. find the determinant value of the first matrix
3. Solve the following set of linear equations -

x + y + z = 6

2y + 5z = -4

2x + 5y -z = 27

1. Find the eigen values for the matrix - [[1,2,3],[11,12,13],[21,22,23]]
2. Create a 9 X 3 vector with random values and assign every alternate element in each row with zero starting from the first element in each row. [Instruction : Use slicing]
3. Create a matrix [[1,2,3],[4,5,6]] and extract the 2 X 2 matrix from bottom right corner using splicing. Add it to a randomly generated 4 X 4 matrix using broadcasting.

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