Digital Communication and Signal Processing 2024

Department of Computer Science, University of Warwick

Seminar 4

Question 1

Generate a white noise vector V1 of size 1000 that has standard normal distribution. Calculate the mean, standard deviation and variance of this vector.

Question 2

Generate a Gaussian white noise matrix M1 of size 10×10 that has mean 3 and variance 5. Calculate the mean and variance of all the values in M1; Calculate the covariance and correlation matrices.

Question 3

Generate a Gaussian white noise matrix M2 of size 10×8 that has mean 0 and standard deviation 5. Calculate the correlation matrix between M1 and M2.

Question 4

Plot V1. Plot the histogram of all the values in V1 and M2 separately, and set bin to 20.