EE315 -121

Term Project

1. Starting from a uniform distribution between (0,1).

1. Generate a sequence of Rayleigh distributed random variable. (parameters: a=0, b=1).
2. Generate a sequence of exponentially distributed random variable. (parameters: a=0, b=1)
3. Generate a sequence of Gaussian random variable. (parameters: a=0, $σ\_{X}^{2}=4$)

2. Check the validity of the random variables generated in parts 1 by

i. normalized histogram and comparing it with the theoretical pdf.

ii. estimating the mean and variance and comparing it with the theoretical values.

3. Verify the central limit theorem (CLT):

1. for a set of sequences of independent identically distributed (i.i.d.) random variables. (use the Rayleigh r.v. generated in step 1)
2. for a set containing sequences of a mix of independent random variables.