Complex Networks - Assignment 4

November 2, 2023

Select a real network (it is better if the network has at least 500 nodes and a single component).

1. Print an histogram for the degree distribution of nodes. See figure 10.3 on book.
2. Repeat the histogram plotting by log-log scale. See figure 10.5 on book.
3. Represent the equation 10.6 ($p_k = Ck^{-\alpha}$) for different values of C and α (remember that you can compute the exact value for α using equation 10.9.). Compare it with the previous histograms.
4. Apply a logarithmic binning for a better visualization of the histogram. See figure 10.6 on book.
5. Represent the cummulative distribution function for the degrees of nodes on the network. See figure 10.7 on book.
6. Conclude if your selected network is a scale-free network or not.