GRG

Lourens Touwen

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Here we consider the GRG model (Generalized Random Graph), as defined in chapter 6 of RGCN II. The weights are powerlaw distributed as described in equation 6.2.1, for both $\tau = 2.5$ and $\tau = 3.5$.

This showcases three different definitions for a degree distribution. The conventional definition, the size-biased definition (1.2.2 in RGCN I), and the random friend distribution (the degree distribution of a uniformly selected adjacent vertex to a uniformly selected vertex in the network.)

Both networks generated here are of size $N = 10000$. For the case with $\tau = 2.5$, the giant component is of size 7797, for the case with $\tau = 3.5$, the giant component is 6476.

All code used for generation is found in `https://github.com/LourensT/DegreeDistr_of_GRG`.
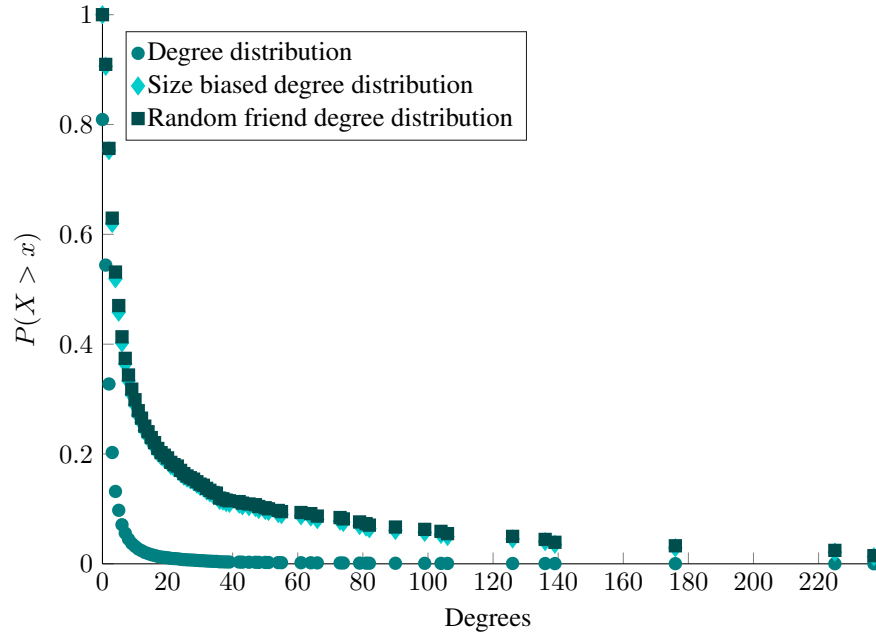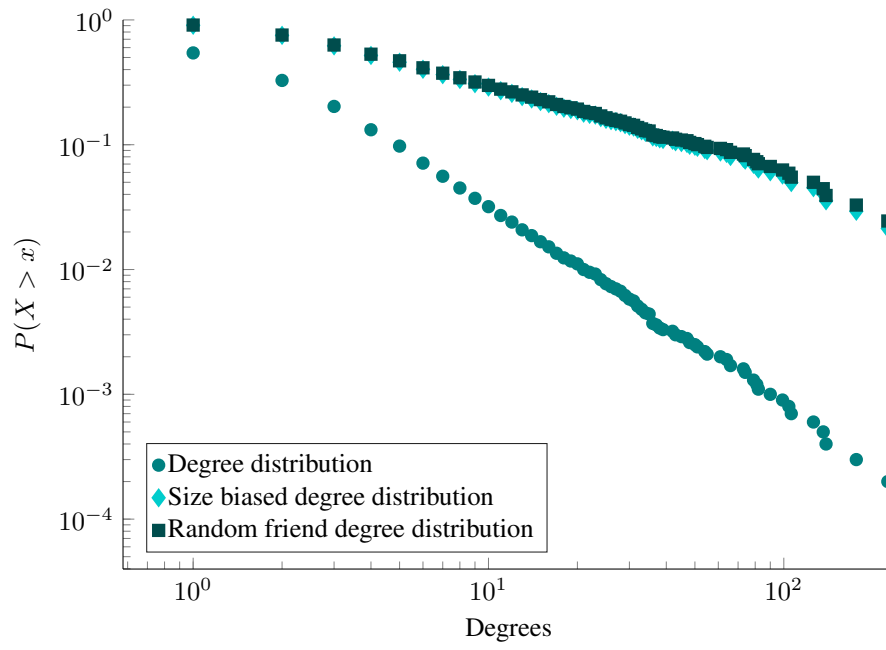

Figure 1: Degree distribution 2,5

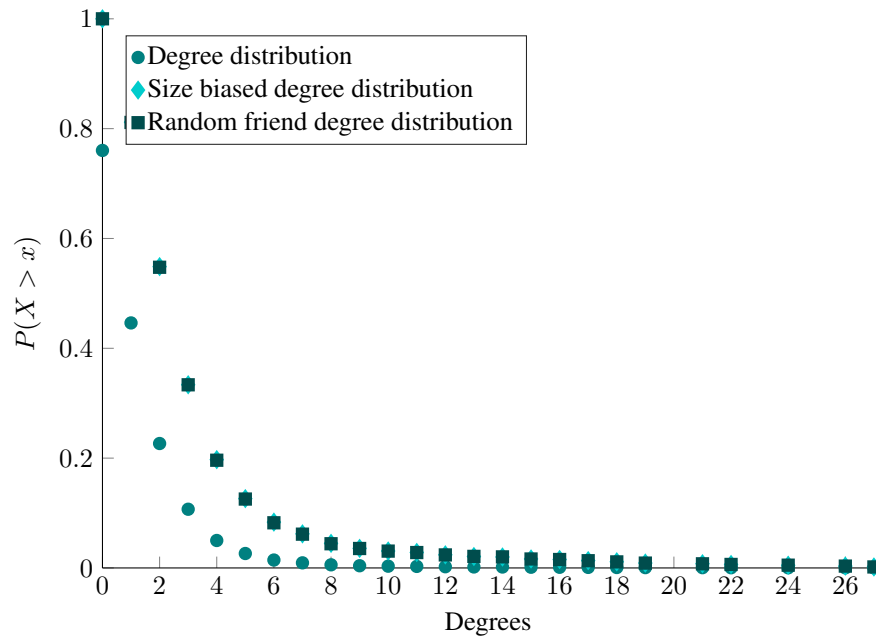Figure 2: Degree distribution loglog 2,5

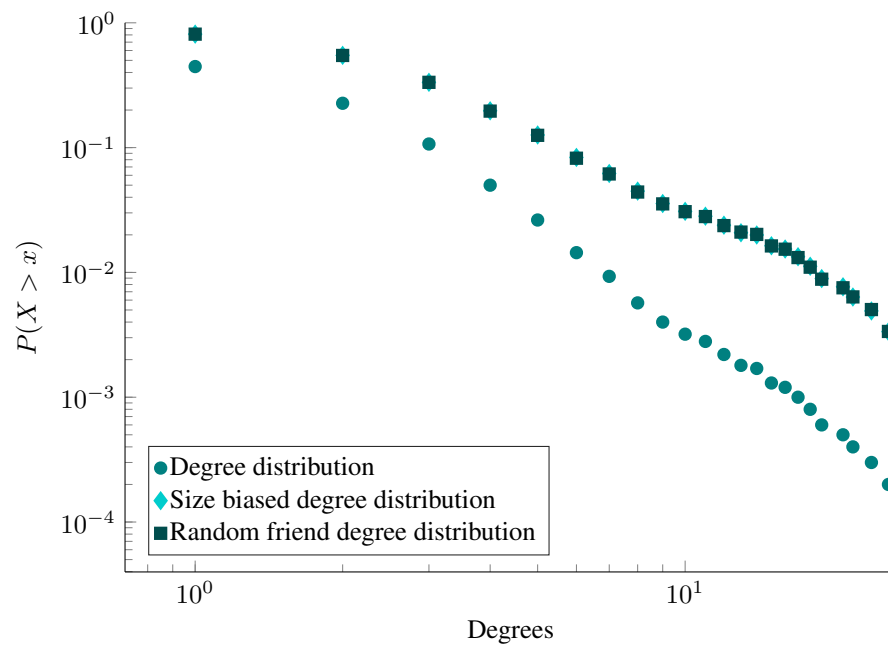Figure 3: Degree distribution 3,5
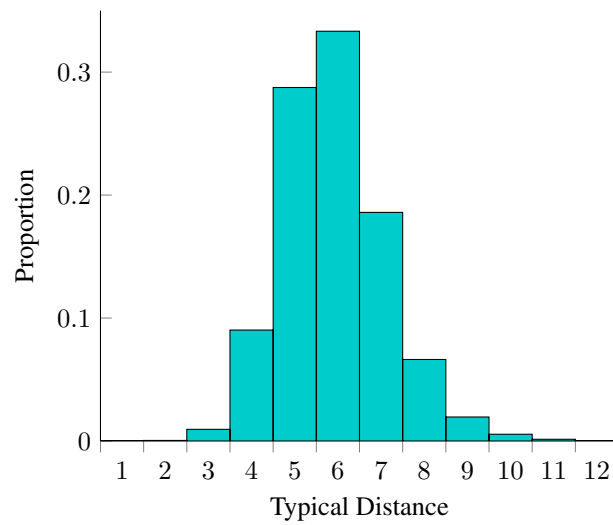
Figure 4: Degree distribution loglog 3,5
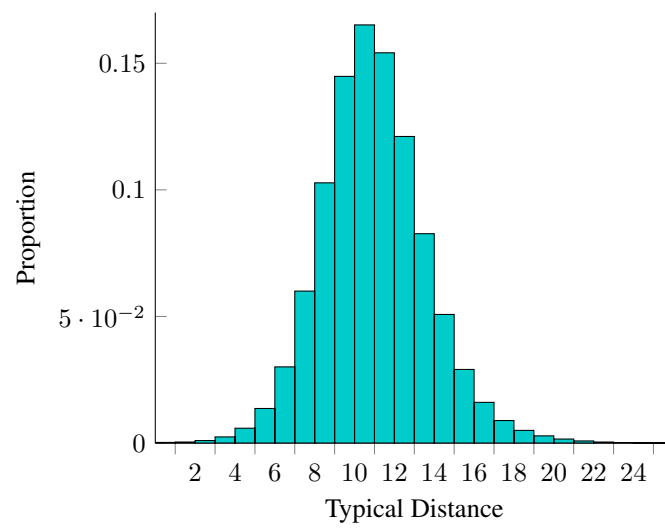

Figure 5: typical distance distribution 2.5

Figure 6: typical distance distribution 3.5