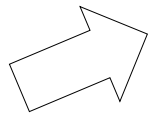
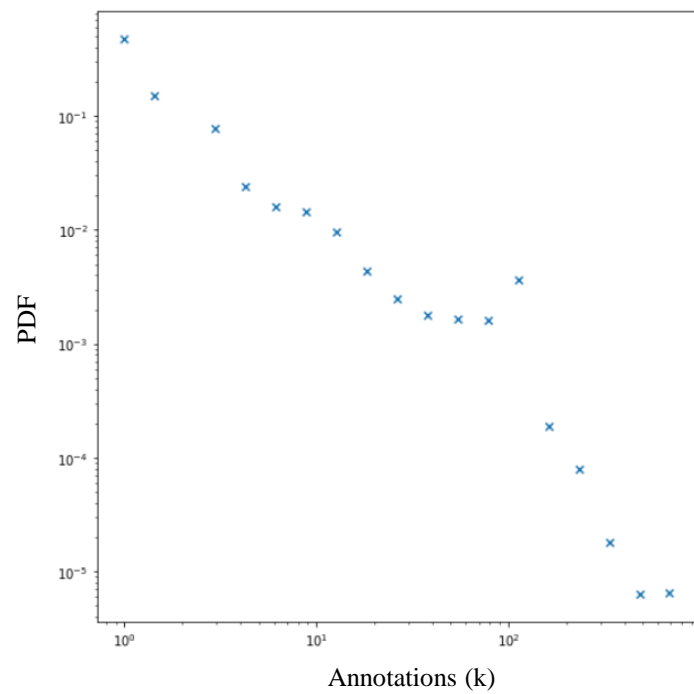
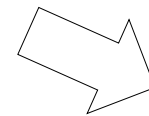
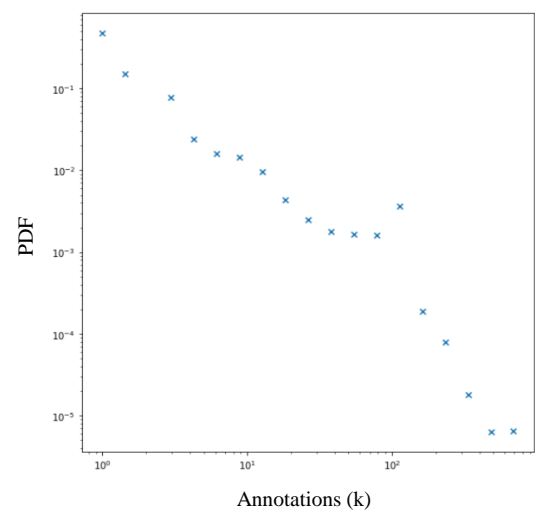


A*Benchmark BindingDB data*

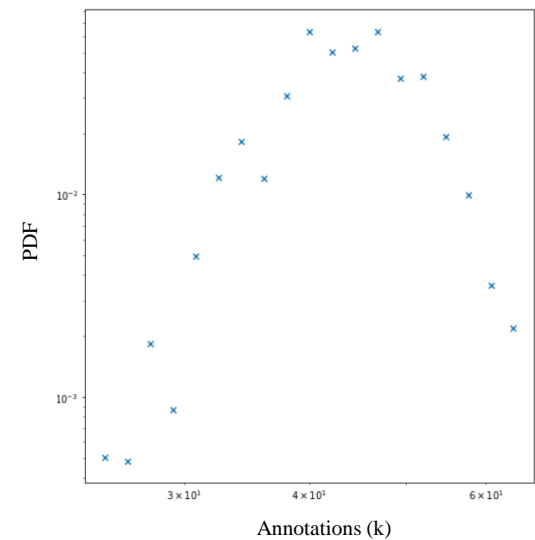
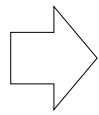
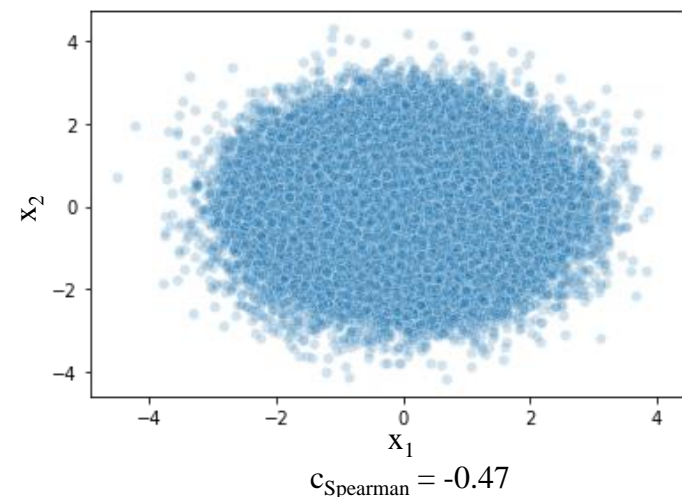
Target degree sequence

 $\{d_1, d_2, \dots, d_N\}$ *Configuration Model*

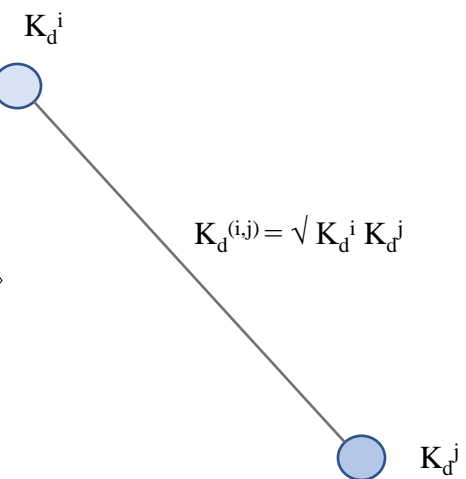
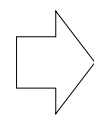
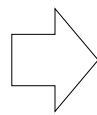
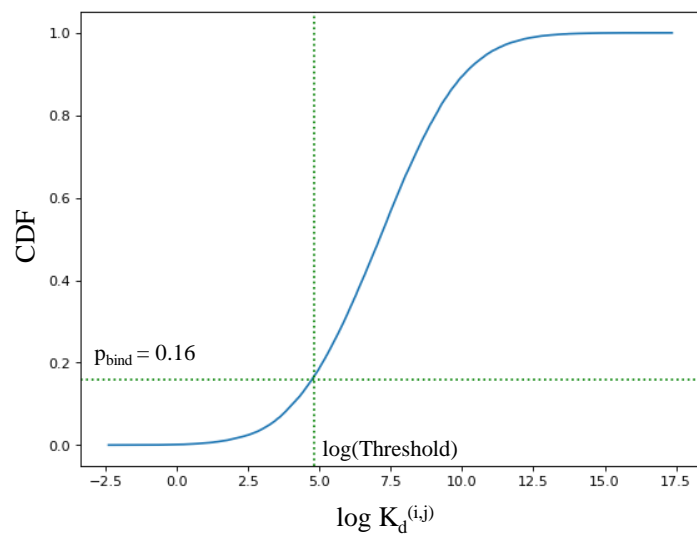
Power-law degree
distribution with
 $N=1,507$
 $\gamma=2.8$
 $k_{\min} = 1$
 $k_{\max} = 1,426$

*ER Graph*

Poisson degree
distribution with
 $N=1,507$
 $\langle k \rangle = 47$

**B***Gaussian Copulas* $c_{\text{Spearman}} = 0$  $k_i = \text{degree_seq_CDF}^{-1}(U1)$ $\log(\langle K_d \rangle^i) = \langle \log(K_d) \rangle + \sigma_{\log(K_d)} * \text{Gaussian_CDF}^{-1}(U2)$

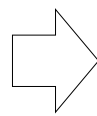
For each edge containing node i ,
 $K_d^i = \exp(\text{Gaussian}(\log(\langle K_d \rangle^i), \sigma_{\log(K_d)}^{k_i}))$

**C** $K_d^{(i,j)} < \text{Threshold}$

Positive Edge

 $K_d^{(i,j)} \geq \text{Threshold}$

Negative Edge

*Unipartite Version*