

Small-world and Power-Law

- A lot of small world networks are power law graphs
 - Internet backbone, telephone call graph, protein networks
 - WWW is a small-world graph and also a power-law graph with $\alpha=2.1-2.4$
 - Gnutella p2p system network has heavy-tailed degree distribution
- Power law networks also called *scale-free*
 - Gnutella has 3.4 edges per vertex, *independent of scale* (i.e., number of vertices)