

E6885 Network Science: *Homework #1*

Ching-Yung Lin, Dept. of Electrical Engineering, Columbia University

September 16th, 2013



Homework #1 (Due 09/30/2013)

- Use the Karate Club Data and the AIDS Blog Data (<http://www.ee.columbia.edu/~cylin/course/netsci/dataset/zachary.zip> and AIDSBlog.zip)
- Write programs to calculate these properties of each node:
 - Degree
 - Closeness Centrality
 - Betweenness Centrality
 - Eigenvector Centrality (PageRank)
 - Clustering Coefficient
- Write programs to find communities, similar to:
 - Figure 4.7: Hierarchical Clustering
 - Figure 4.8: Spectral Analysis
 - Figure 4.9: Spectral-based clustering
- Please submit:
 - A report which includes:
 - Technical discussions – challenges you solved, insights you got, interpretation of results, etc.
 - List of code & results

