E6885 Network Science:

*Homework #1*

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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