

Lecture 7. Web graphs.

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Class notes

In this lecture, we covered:

- Strongly connected components (SCC)
- Bow-tie structure of the web (and in trans-national corporations)
- Importance of ranking in web search
- HITS and Pagerank

The slides and Chapters 3 and 4 of Kleinberg and Easley [1] cover the topic.

There is a single Giant SCC in the web graph. Note that there is no reason that there cannot be multiple Giant SCCs. In fact there are other SCCs (cycles) in the tubes, tendrils and in/out regions. However, the *Giant* SCC just happens to be unique. See [1] for more discussions.

Exercise 0.1. See Kleinberg and Easley [1], Ch. 14.7 Ex 1 on computing HITS scores on a particular network. Try the same for pagerank and other networks yourself.

References

- [1] David Easley and Jon Kleinberg. *Networks, crowds, and markets: Reasoning about a highly connected world*. Cambridge University Press, 2010.