

CS 455/555 Paper: Hot Topics in Networking

Assigned: Tuesday, October 6, 2009

Due: Thursday, December 10, 2009 *at the beginning of class*

The main purpose of this assignment is to introduce you to hot topics in networking that we don't have time to cover during the semester. For CS 555 students, this assignment will also require that you prepare and deliver a class presentation on your topic.

Assignment

You may choose from the following broad topics or suggest your own (to be approved by Dr. Weigle):

- Peer-to-Peer Applications
- Distributed Hash Tables
- ATM ABR Congestion Control
- IPv6
- BGP (Border Gateway Protocol)
- PPP (Point-to-Point Protocol)
- MPLS (Multiprotocol Label Switching)
- Bluetooth
- WiMAX
- Cellular Internet Access
- Mobility in Cellular Networks
- Multimedia Networking
- PGP (Pretty Good Privacy)
- IPsec
- Securing Wireless LANs (WEP)
- Intrusion Detection Systems
- Sensor Networks for Environmental Monitoring
- Cloud Computing
- RFID Networks
- Network Neutrality
- Voice over IP
- IP Traceback
- DNS Attacks

You are expected to choose *at least* two articles that address one of these topics. (The items in the left column correspond to sections in our textbook, so that might be a good place to start.) Each article should be read, understood, and related with concepts discussed in class. In particular, look for articles that describe the real-world impact of the topic.

Your assignment is to write a report *in your own words*. **It is not acceptable to reproduce sentences or paragraphs from the articles (even if you change a word or two in each sentence).** In this report, you should summarize what you have learned from the articles. Instead of providing a separate summary for each article that you have read, you should provide a single summary that integrates the concepts of each of the articles in a unified manner. Make sure to give background and describe the topic well enough that your summary of the articles can be understood.

You must provide complete references to all referred articles (including URLs if the articles were found online). In addition to references to your main articles, provide references for any background information that you include and found somewhere other than the main articles.

Format

- Double-spaced, 1-inch margins, 5 pages (CS 455), 7 pages (CS 555)
- 12-point font (either Arial, Helvetica, or Times New Roman)
- Include section headings and subsection headings. You **must** include Introduction, Conclusion, References, as well as other appropriate headings.
- Format for References Section:
Authors' names. Article Name. *Magazine Name*, vol. Volume, no. Number, (Month Year), pp. Pages.
Example:
Fall, K. and S. McCanne. You Don't Know Jack About Network Performance. *ACM Queue*, vol. 3, no. 4, (May 2005), pp. 54-59.
- Format for Citing Inside the Paper: (Authors' Last Names, Year)
Example: (Fall and McCanne, 2005)

Failure to follow the formatting guidelines will result in loss of points.

Resources

The campus library (<http://www.lib.odu.edu/resources/ss/index.htm>) and the public libraries are good sources for the trade journals. I also have a selection of *Communications of the ACM*, *IEEE Spectrum*, and *IEEE Communications* issues in my office. You're welcome to come by during office hours and take a look at them.

Note that wikipedia is **not** an acceptable resource. If you find background information on wikipedia, find a primary source (textbook or article) that you can cite instead.

Suggested Deadlines

- Oct 22 – topic chosen, papers selected (*mandatory deadline*)
 - ***Send me an email with the subject “CS 455/555 – topic” to register your paper topic. The email must contain your topic and the citations of the articles you plan to use.***
- Oct 29 – outline of paper
- Nov 12 – first draft
- Dec 10 – final version due

CS 555 Presentation

In addition to the paper, you must prepare a 15-20 minute lecture-style presentation on your topic. The idea is to teach your fellow students something. Presentations will be held on the following days (order of presenters will be chosen at random, but you should be prepared to present on the first day of presentations):

- Thursday, November 19
- Tuesday, November 24
- Tuesday, December 1
- Thursday, December 3
- Tuesday, December 8