Requirements

You are first expected to read and understand two or three recent research papers in an area of networking that we have touched upon either in class or in the network seminars you’ve attended. This includes a broad range of topics from routing to network security to multicast to networked applications (e.g. peer-to-peer, distributed gaming, content delivery). If you are unsure whether a topic is in scope for this assignment, please check with me first.

After you have read about and thought about the papers, you are to write a short “synthesis” paper relating the papers you have read about. As the name implies, such a paper briefly summarizes the main ideas in both papers (simply repeating or paraphrasing what the authors wrote is obviously not acceptable), and then goes on to describe the connections between the papers. This connection can be described in terms of how the ideas in the papers complement each other, contradict one another, or might articulate how the ideas in the papers can be used together to create something more significant than just the “sum of the parts”.

To write an interesting synthesis paper, the papers you choose to cover should not be too closely coupled with one another. For example, two papers by the same research group should be avoided, as they will have the same point of view. Similarly, it will also be difficult to extract new ideas out of a pair of papers which build directly upon one another. I recommend trying to find two papers which cover different aspects of one problem, or which attempt different approaches.

Evaluation

What am I looking for in a good paper?

- First, I am looking for comprehension. Your paper should demonstrate an understanding of the main ideas in the papers and should summarize the contributions clearly and succinctly. Please do not write a paper longer than four or five typeset pages.

- Second, I am looking for a spark of originality. In the synthesis part of the paper, I am looking for something that goes beyond summarization of the work of others to express a new idea of your own, or a new perspective that you obtained in the course of your reading.

- Third, I am looking for a clean, readable presentation that is nicely formatted, spell-checked and carefully proofread.
Deliverable

There are several decent ways to format your paper, but the one I prefer (and which you will definitely use to format your Ph.D. or M.S. thesis if you are a CS graduate student) is LaTeX. A LaTeX template for this assignment will be posted on the class webpage. If you elect not to use LaTeX, that is ok, but please make doubly sure that your paper is nicely formatted. The final version of your paper is due in the class inbox no later than 5PM on Thursday, December 16.

Getting Started

Perhaps the hardest part of this assignment is identifying a good, interesting topic to start working on. It is in your best interest to pick papers that are themselves interesting, since these lend themselves best to good synthesis papers (there is nothing more boring than reading a summary of a paper that is boring to begin with). To get some ideas, I recommend perusing the technical programs of the best networking conferences, where high-quality papers are published:

The premier annual networking conference is ACM SIGCOMM. Roughly 30 papers were published in SIGCOMM 2010, and any of them could make for part of an interesting synthesis paper:

http://conferences.sigcomm.org/sigcomm/2010

Other top-flight venues include IEEE INFOCOM (warning: 200+ papers!), NSDI, and ACM CoNEXT.

There are literally dozens of other networking conferences, and while some of these are high quality, others publish second-rate papers, so feel free to check with me first before investing lots of time in poor papers.

A final pointer for you is to the list of papers that are currently on the reading list for the CS Doctoral Written Exam for our Networking Ph.D. students (will be updated for 2010 soon). The networking faculty here think these papers are required reading for our Ph.D. students:

http://www.cs.bu.edu/groups/wing/exam/