Research Paper
Due on May 14th at the beginning of class

You are to research the literature on some aspect of interconnection networks and write a paper summarizing your findings.

Start by picking a topic. It can be in any area of interconnection networks: topology, routing, flow control, router architecture, deadlock, fault tolerance, etc. Your topic should focus on a specific question or sub problem, not a whole area – flow control is too broad to be an effective topic, for example. Next, select a minimum of three good papers from the literature in this topic area. You may need to read the abstracts of many more papers to find three that are relevant to your topic. After reading these papers (and perhaps some of the papers they reference), organize your thoughts and write your research paper.

Your paper should be a critical review of the literature you have read, not just a survey or book report. Your paper should include at least the following elements:

1. Describe the problem: What problem are the papers you have chosen addressing? What are the constraints? How does one measure the quality of a solution? What makes this problem hard? What are the key issues?

2. Describe the solutions: What contribution does each of your papers make toward the solution of this problem? What are their strong points? What are their weak points? What remains to be done?

3. Write a critique of the topic: Is the problem the right one? Is there a way to recast the problem to accomplish the same end in an easier way? Do the solutions address the critical issues associated with this topic? Are there any key issues that have not been addressed? How would you address the problem? Would you use one of these solutions or would you take a different approach?

We **strongly suggest** you visit Prof. Dally or Brian Towles or both during office hours to discuss your research paper. In particular, you should try to get some input when you have selected your topic and papers to review and again after you have reviewed the papers and are outlining your critique.

To see some examples of research papers of this type, papers from the last offerings of the course are on the web at: http://cva.stanford.edu/ee482b/research/ (2001) and http://cva.stanford.edu/ee482b_spr99/research.html (1999). Good online sources for papers include the ACM (http://www.acm.org/dl) and IEEE (http://ieeexplore.ieee.org) digital libraries along with Citeseer (http://www.citeseer.com). Also, computer architecture conferences such as ISCA, HPCA, SPAA, SC, ICS, and HOTI and journals such as IEEE Trans. On Computers, IEEE Trans. On Parallel and Distributed Systems, and the Journal of Parallel Computing often feature interconnects papers.