

Computer Architecture

Spring 2004

Project Description*

April 1, 2004

Due Dates

Proposal: 22 April in class.

Progress reports: 13 May in class.

Talks: 1 June and 3 June in class.

Report: 8 June at noon in AMR's mailbox.

Description

The default project is to do some original research in a group of three students. For example, you could examine a modest extension to a paper studied in class or simply re-validate the data in some paper by writing your own simulator or using SimpleScalar.

You will be graded on (1) how well you define your problem, (2) survey previous work, (3) design and conduct experiments, and (4) present your results. The goal to shoot for is conference paper like the ones in your reader. Since time is very limited, however, the above goal is difficult to reach, and we will reward those that aim high even if they do not completely succeed. The key is insuring that some aspects of your work are completely done; it is very hard to grade a project where the simulator did not quite work.

Alternatively, you may work in a group of two to write a paper that surveys an area within computer architecture. The paper should: (1) summarize work in an area, giving extensive references, (2) present opinions of others for and against various options (with references), and (3) conclude with your opinion of the strengths and weaknesses of arguments presented above. You will be graded on the completeness of your survey, the accuracy of your summaries, the support you give for your opinions, and the quality of your presentation. Since a survey paper is “safer” than a research project, we will hold survey papers to a higher standard of completeness and analysis of the literature.

*This project description was adapted from Mark Hill's project description for CS/ECE 752 at the University of Wisconsin.

Proposal (Due: 22 April)

Proposals should be about two-three pages long. They should include: a description of your topic, a statement of why you think the topic is interesting or important, (for projects with original research) a description of the methods you will use to evaluate your ideas, a proposed schedule for your evaluation, and references to at least three papers you have obtained.

The text and your reader point to many papers. See also Proceedings of the International Symposium on Computer Architecture, Proceedings of the High-Performance Computer Architecture, Proceedings of the conference on Architectural Support for Programming Languages and Operating Systems, Microprocessor Report, IEEE Transactions on Computers, ACM Transactions on Computer Systems, IEEE Computer, IEEE Transactions on Parallel and Distributed Systems, ACM Digital Library (Full text available from campus networks.), World-Wide Computer Architecture Information, and Readings in Computer Architecture Web Component.

Progress report (Due: 13 May)

Progress reports should describe where you are in your schedule and how much of your proposed project you can reasonably expect to complete by the end of the term.

Talks (in class on 1 June and 3 June)

The last two classes will be devoted to project talks. The talks will be 20-30 minutes in length depending on how many groups there are. All group members should deliver part of the talk. The talk should give highlights of the final report, including the problem, motivation, results, conclusions, and possible future work. Time limits will be enforced to let everyone present.

We will meet with each group to review your proposed talk in the week prior to the presentations.

Report (Due: noon on 8 June in AMR's mailbox)

Reports should consist of an abstract, body and optional appendices. The abstract should summarize the contributions of the report in one or two paragraphs. The length of the body should be the equivalent of 10-15 pages at double-spaced 10-point. Additional supporting material of any length can be put in appendices.