EECS 468 - Projects
Programming Massively Parallel Processors with CUDA

If you are taking EECS-468, you are expected to work on a research project. As mentioned in the class, we expect you do define your project for EECS-468. We will not give out sample projects. The project proposal is the formal process to notify us of your project choice. The projects should be individual, or in teams of 2-3 students.

Milestone 1: Project Proposal

The project proposal is a simple document that describes the work you plan to do. It will serve as a contract on what you will deliver by the end of the quarter. The work should be much more involved than a bi-weekly homework assignment. Through the project you will apply your newly acquired knowledge of how to write and optimize CUDA programs in an interesting domain. The project does not necessarily require novel data structures or algorithms, although novelty will be greatly appreciated. There is a word template file on canvas that explains the structure of the proposal, and you are free to use at your discretion. Please submit your research project proposal **in PDF** via canvas by the deadline. An assignment that specifies the deadline has been created on canvas.

Milestone 2: Project Presentation

Instead of a final exam, we will have presentations of the projects where you will present your work and near-final results. The exact form (slide presentation or poster) will be decided as we near the end of the quarter, based on the number of projects we have and other timing constraints. An assignment has been created on Canvas to specify the deadline.

Milestone 3: Project Deliverable

By the project delivery deadline you need to submit the final project report and a tarball with all your source files, input data, and results. A tarball is a single file that archives a collection of files, for example compressing a directory with zip or making an archive with tar. You can use any archive utility you want for that. An assignment has been created on Canvas to specify the deadline

Sample Projects

In the past, students have worked on alpha matting (430x speedup), satisfiability problems in Łukasiewicz logic (14x), motion simulation of N-dimensional surfaces (372x), evolution of biofilms with level-set (67x), light Monte Carlo for tissue diagnostics (190x), PDE solvers (39x), median filter (260x), image inpainting (190x), water surface simulation (108x), galaxy evolution simulation, MC vectorization, image super-resolution, quality control of IV bags, matched texture coding, max-flow/min-cut, and Poisson image editing.