Accelerators to Applications

Algorithms Lessons Outline

Kyle Burke Assistant Professor of Computer Science Wittenberg University Summer 2011

This document describes the order of lessons given in an undergraduate Algorithms class in the Accelerators to Applications (A2A) project. The order of algorithms covered follows the order of the same sequential topics in the book rather than being specifically based on difficulty of learning each parallel algorithm. Thus, the order of topics covered is somewhat optional. Since there is a practical programming component to this course, it is necessary for students to first understand multiprocessing elements of the course language as well as basic theoretical concepts.

The lessons included are:

- Theory of Parallel Algorithms
- Parallel Programming in Chapel
- Speedy Sorting
- Nearest Neighbors

The "Theory of Parallel Algorithms" lesson is a prerequisite for the other three lessons. "Speedy Sorting" is a prerequisite for "Nearest Neighbors".