Introduction to Volume 8 Issue 1

Steven I. Gordon
Editor
Ohio Supercomputer Center
Columbus, OH
sgordon@osc.edu

Forward

This issue begins with an article by Shiflet et.al. on using HPC for genomic sequence alignment. They present an overview of an online educational module that employs a sequential algorithm to determine the alignments of two DNA sequences. The module also describes several approaches to parallelization and speedup. The module is evaluated based on its use in a bioinformatics course at University "Magna Græcia" of Catanzaro, Italy.

The article by Jung, Zirpoli, and Slick provides an overview of a computational chemistry module that helps students to visualize a complex organic chemistry reaction. The module was used in an undergraduate course to help students understand the thermodynamics and other aspects of the reaction.

The three student articles detail the findings of several intern experiences. Collins discusses the use of augmented reality to visualize the molecular structures from the Protein Data Bank. Maringanti describes the creation of an algorithm to create a graph for a complex integrated circuit design. Finally, Nguyen presents an approach for the parallelization of database queries for large-scale distributed systems.

All of the student articles are a product of their participation in the Blue Waters Student Internship program.