Software Techniques for Rendering Fractals

Brown, Cade (School: L&amp
N STEM Academy)

This project seeks to implement efficient routines for computing fractals based off of escaping sets, covering aspects such as algorithmic complexity and speed, network-based data transfer, diagnostics and real time statistics, and the graphical representation of data. These areas are all important to create a real time fractal viewer, especially when distributed over a network and utilizing communication between computers. In order to ensure correctness and modularity, the project exemplifies ANSI C and GNU coding standards for C89/99. The program utilizes the real time diagnostics to recognize bottlenecks in performance, and helps diagnose which section of the code needs to be optimized. This software can help visualize complex computational results to non-technical people in an interesting, yet still mathematically accurate, model.

Awards Won:

National Security Agency Research Directorate : Honorable Mention "Future of Computing"