AdaSort: Adaptive Sorting using Machine Learning

Abstract

Sorting algorithms and their implementations in modern computing requires improvements in sorting large data sets effectively, both with respect to time and memory consumed. This paper is aimed at reviewing multiple adaptive sorting algorithms, on the basis of selection of an algorithm based on the characteristics of the data set. Machine Learning allows us to construct an adaptive algorithm based on the analysis of the experimental data. A review of algorithms designed using Systems of Algorithmic Algebra and Genetic Algorithms was performed. Both methods are designed to target different use cases. Systems of Algorithmic Algebra is a representation of pseudo code that can be converted to high level code using Integrated toolkit for Design and Synthesis of programs, while the Genetic Algorithm attempts to optimize its fitness function and generate the most successful algorithm.

References

1. M.J. Quinn, “Parallel Programming in C with MPand OpenMP” Tata McGraw Hill


Index Terms

Computer Science Algorithms

Keywords

Sorting, Machine Learning, Object oriented programming