

INVESTIGATING AN ENHANCED IMPLEMENTATION OF AHO-CORASICK AND COMMENTZ-WALTER STRING MATCHING ALGORITHMS

H.M.S.K.B. Herath

Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka
Department of Statistics and Computer Science, University of Peradeniya, Peradeniya, Sri Lanka

Pattern matching is the most important part of many bioinformatics related applications such as DNA sequence analysis. Accelerating this process using Graphic Processing Units (GPUs) is thus greatly advantageous for most due to increasing data. Many algorithms give fast methods to search multiple occurrences of a given string of characters. This research report details the performance analysis of two powerful multi-pattern matching algorithms, namely Aho-Corasick and Commentz-Walter on GPU with CUDA C. Moreover, this report details which algorithm is more suitable and has better performance on GPU CUDA platform.