Abstract

we survey the current techniques to handle with the problem of parallel string matching with computing models. This is becoming a more and more relevant issue for many fast growing areas such as information retrieval and computational biology. We focus on current developments of parallel string matching, computing models, and the central ideas of the algorithms and their complexities. We present the performance of the different algorithms and their effectiveness. Finally this analysis helps the researchers to develop the better technique.
Parallel String Matching Problems with Computing Models – An Analysis of the Most Recent Studies


- Leslie G. Valiant, A bridging model for parallel computation, Commun. ACM, volume 33, issue 8, August, 1990, pages 103—111


M. Alicherry, M. Muthuprasanna and V. Kumar, High speed pattern matching for
- D. Pao, W. Lin and B. Liu, A memory-efficient pipelined implementation of the
2010.
- W. Lin and B. Liu, Pipelined parallel AC-based approach for multi-string matching, IEEE
- N. Hua, H. Song and T. V. Lakshman, Variable-stride multi-pattern matching for
- D. P. Scarpazza, O. Villa and F. Petri, Exact multi-pattern string matching on the
- Y. Sugawara, M. Inaba and K. Hiraki, Over 10Gbps string matching mechanism for
multi-stream packet scanning systems, Field Programmable Logic and Application, vol. 3203,
- Chien-Chi Chen and Sheng-De Wang, "A Multi-Character Transition String
Matching Architecture Based On Aho-Corasick Algorithm", International Journal of
- HyunJin Kim et al., "A Memory-Efficient Bit-Split Parallel String Matching using
Pattern Dividing for Intrusion Detection Systems", IEEE Transactions On Parallel And
- Yi-Hua E. Yang and Viktor K. Prasanna, "Robust and Scalable String Pattern
Matching for Deep Packet Inspection on Multi-core Processors", IEEE TRANSACTIONS
- Yue Hu et al., "A Fast Algorithm for Multi-String Matching Based on Automata
- Junghak Kim et al., "Programmable Architecture for NFA-based String
- Yi Tang et al., "Independent Parallel Compact Finite Automatons for Accelerating
- Xiaofei Wang, Yang Xu, Junchen Jiang, Olga Ormond, Bin Liu, and Xiaojun Wang
"StriFA: Stride Finite Automata for High-Speed Regular Expression Matching in Network
Intrusion Detection Systems", IEEE SYSTEMS JOURNAL, VOL. 7, NO. 3, pp. 374-384,
2013.
- Weirong Jiang et al., "Scalable Multi-Pipeline Architecture for High Performance
- Yu Cheng and Tao Zhang, "Design of Fast Multiple String Searching Based on
Improved Prefix Tree", 2010 Third International Conference on Knowledge Discovery and
Data Mining, pp. 111-114, 2010.
- Shmuel T. Klein and Dana Shapira, "The String-to-Dictionary Matching
- KSMV Kumar, S. Viswanadha Raju and A. Govardhan, "Overlapped Text Partition
- Yao Xin, Benben Liu, Biao Min, WillX. Y. Li, Ray C. C. Cheung, Anthony S. Fong, Ting
Fung Chan, "Parallel architecture for DNA sequence inexact matching with
- Benedikt Forchhammer, Thorsten Papenbrock, Thomas Stening, Sven Viehmeier, Uwe Draisbach, Felix Naumann, "Duplicate Detection on GPUs", pp. 165-188, 2013

**Index Terms**

Computer Science

Information Sciences

**Keywords**

Text processing IRS computing models string matching parallel algorithms.