Abstract

Bit Parallelism exploits bit level parallelism in hardware to perform operations. Bit Parallelism is a technique that is used to solve string matching problem, when the pattern to be searched for is less than or equal to word size of a system. It is a technique that takes the advantage of intrinsic parallelism of the bit operations inside a system word. By using cleverly this fact, the number of operations that an algorithm performs can be cut down by a factor of at most \( w \), the number of bits in system word. Since in current architecture word size is 32 bits or 64 bits, the speedup is very significant in practice. It is a form of parallel computing and is used to have a solution to exact string matching problem. The approach is further extended for multiple patterns string matching problem.

References

- Heikki Hyyro, Kimmo Fredrikson, Gonzalo Novarro, "Increased Bit Parallelism for Approximate and Multiple String Matching"; Journal of Experimental Algorithmics, Vol 10, 2005

**Index Terms**

Computer Science  
Pattern Recognition

**Keywords**

String Matching  
Bit Parallelism  
Suffix Automata.