

Towards Optimal Search: A Modified Secant Method for Efficient Search in a Big Database

Muhammad Nomani Kabir*

Faculty of Computer Systems & Software Engineering,
University Malaysia Pahang, Malaysia
26300 Gambang, Kuantan, Malaysia
(*Corresponding author) nomanikabir@ump.edu.my

Jahan Ali

Faculty of Computer Systems & Software Engineering
University Malaysia Pahang, Malaysia
26300 Gambang, Kuantan, Malaysia
jahancse@gmail.com

Yasser Alginahi

Dept. of Electrical and Computer Engineering
University of Windsor
401 Sunset Ave, Windsor, Ontario, N9B 3P4, Canada
alginah@uwindsor.ca

Hocine Benseghir

Faculty of Engineering Technology
University Malaysia Pahang
26300 Gambang, Kuantan, Malaysia
hocine0591@gmail.com

Abstract

Search techniques are integral part for text authentication and plagiarism checks. In this work, our aim is to develop an efficient search algorithm for Arabic texts in a big database. The database contains the authentic source of information where information is ordered; thus the efficient algorithm can be used for searching the texts. Our search algorithm uses a quasi-Newton method -Secant method instead of traditional binary search. The secant method has much faster convergence property than the binary search and hence the algorithm can find the specific texts in a shorter time period.

Keywords: binary search, interpolation search, text search, quasi-Newton method, Secant method