

A secured and efficient multi-factor biometric authentication scheme using plan recognition technique

ABSTRACT

One of the most important parts in security is an authentication. It has become an essential security features for network communication. Nowadays, there is a need for strong level of authentication to ensure high level of security is being delivered to the application. All of this being done while still maintaining the desired level of performance that is expected of it. However, this approach brings challenging issues on efficiency and security. There have been several schemes and proposals related to multi-factor authentication previously but all of these schemes are still vulnerable to certain types of attacks. Furthermore, a more pressing issue for multi-factor authentication is on the high execution time which leads to a downfall in overall performance. The objective of this research is to propose an authentication method scheme and measure the effectiveness based on the authentication time. This scheme uses plan recognition technique, which is able to detect and identify the user effectively, defend from well-known attacks such as brute force or dictionary attack. The proposed scheme should able to run with a very low execution time. An experiment has been conducted to evaluate the scheme. Result from the experiment shows that the proposed scheme processing time is lower than the other previous schemes. This is even after additional security features has been added to the scheme.

Keyword: Multi-factor authentication; Biometric; Plan recognition; Effectiveness; Execution time

