Abstract

Human identification plays an important role in numerous fields in the world, such as forensic, government institution, medical application, ..etc. Biometric is a metric to measure the biological characteristics that has then been used for identification and verification functions. The verification process is performed by compare the biometric characteristic such as, fingerprint, iris, DNA, etc., with a pre-stored record, while the identification process done by find the best match between the biometric characteristic and all records saved in a database. In this paper, we propose a biometrics system based on the DNA as a biometric technology for human identification using sixteen Short Tandem Repeats (STRs) DNA marker. A database of 139 records has been considered for Iraqi Diyala Province Population as a real data. In addition, a million DNA profiles has been generated randomly to test the performance of the proposed system. A database has been built using SQL SERVER software environment that provides a high efficiency in human identification. The proposed identification system introduces different search and matching methods with distinct matching level ratios that ease the utilization by users. The outcome results of the proposal system show a flexibility in term of inserting,
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searching, updating and a high ratio of matching.

References

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Index Terms

Computer Science

Security

Keywords

Biometrics, Identification system, DNA-profile, STR loci, Database, SQL server 2012.