

SYNOPSIS OF THE PROJECT

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Shared folder/git repository details	https://github.com/himaudit211/Mainproject
Project Title	Efficient and Secure Cancelable Biometric Authentication Framework Based on Genetic Encryption Algorithm
<p>Description of Project :Different cancelable biometric techniques have been proposed to maintain user data security. In this project , a cancelable biometric framework is introduced to satisfy user data security and keeping the original biometric template safe away from intruders. Thus, our main contribution is presenting a novel authentication framework based on the evolutionary Genetic Algorithm (GA)-based encryption technique. The suggested framework produces an entirely unrecognized biometric template by hiding the whole discriminative features of biometric templates; this is with exploiting the outstanding characteristics of the employed Genetic operations of the utilized encryption technique. Firstly, the GA initiates its search from a population of templates, not a single template. Secondly, some statistical operators are used to exploit the resulting initial population to generate successive populations. Finally, the crossover and mutation operations are performed to produce the ultimate cancelable biometric templates. Biometric databases of the face templates are tested and analyzed. The proposed cancelable biometric framework achieves appreciated sensitivity and specificity results compared to the conventional OSH (Optical Scanning Holography) algorithm. It accomplishes recommended outcomes in terms of the AROC (Area under the Receiver Operating Characteristic) and the probability correlation distribution between the original biometrics and the encrypted biometrics stored in the database. The experimental results prove that the proposed framework achieves excellent results even if the biometric system suffers from different noise ratios. The proposed framework achieves an average AROC value of 0.9998, an EER (Equal Error Rate) of 2.0243×10^{-4} , FAR (False Acceptance Rate) of 4.8843×10^{-4} , and FRR (False Rejection Rate) of 2.2693×10^{-4}.</p>	
Front end and Backend Tools	ML.Net, AForge.Net, C#.Net and SQL server , Google Drive.

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