

Multi Biometric Personal Identification System Based On Hybrid Intelligence Method

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Abstract : Biometrics is a technology that has been widely used in many official and commercial identification applications. The increased concerns in security during recent years (especially during the last decades) have essentially resulted in more attention being given to biometric-based verification techniques. Here, a novel fusion approach of palmprint, dental traits has been suggested. These traits which are authentication techniques have been employed in a range of biometric applications that can identify any postmortem PM person and antemortem AM. Besides improving the accuracy, the fusion of biometrics has several advantages such as increasing, deterring spoofing activities and reducing enrolment failure. In this paper, a first unimodal biometric system has been made by using (palmprint and dental) traits, for each one classification applying an artificial neural network and a hybrid technique that combines swarm intelligence and neural network together, then attempt has been made to combine palmprint and dental biometrics. Principally, the fusion of palmprint and dental biometrics and their potential application has been explored as biometric identifiers. To address this issue, investigations have been carried out about the relative performance of several statistical data fusion techniques for integrating the information in both unimodal and multimodal biometrics. Also the results of the multimodal approach have been compared with each one of these two traits authentication approaches. This paper studies the features and decision fusion levels in multimodal biometrics. To determine the accuracy of GAR to parallel system decision-fusion including (AND, OR, Majority voting) has been used. The backpropagation method has been used for classification and has come out with result (92%, 99%, 97%) respectively for GAR, while the GAR for this algorithm using hybrid technique for classification (95%, 99%, 98%) respectively. To determine the accuracy of the multibiometric system for feature level fusion has been used, while the same preceding methods have been used for classification. The results have been (98%, 99%) respectively while to determine the GAR of feature level different methods have been used and have come out with (98%).

Keywords : back propagation neural network BP ANN, multibiometric system, parallel system decision-fusion, practical swarm intelligent PSO

Conference Title : ICPRMA 2015 : International Conference on Pattern Recognition Methods and Applications

Conference Location : London, United Kingdom

Conference Dates : June 28-29, 2015