Review on impact of Face Recognition Technology in Biometrics

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Abstract: *Proposed research gives pilot results of project that is oriented on use of Neural Network in Face recognition. Biometrics is the technology of identifying uniquely human subjects by means of measuring and analyzing one or more intrinsic behavioral or physical traits. These human body characteristics include fingerprints, voice patterns, eye retinas and irises, facial patterns and hand measurements. Neural networks have been successfully applied in a wide range of supervised and unsupervised learning applications. Neural-network methods are not commonly used for data-mining tasks, however, because they often produce incomprehensible models and require long training times. We have integrated Neural-Network in this research with Biometric technique known as Face Recognition.*

Keywords: Biometrics, Simulation, Neural Network, Matlab, Face Recognition, Physical Traits

[I] INTRODUCTION

Biometrics is the technology of identifying uniquely human subjects by means of measuring and analyzing one or more intrinsic behavioural or physical traits. These human body characteristics include fingerprints, voice patterns, eye retinas and irises, facial patterns and hand measurements. Biometric systems include applications making use of biometric technologies and which allow the identification automatically, verification or authentication of a natural person.

Neural networks were started about 50 years ago. Their early abilities were exaggerated, casting doubts on the field as a whole there is a recent renewed interest in the field, however, because of new techniques and a better theoretical understanding of their capabilities. Neural networks have been successfully applied in a wide range of supervised and unsupervised learning applications. Neural-network methods are not commonly used for data-mining tasks, however, because they often produce incomprehensible models and require long training times.

Automatic recognition of human faces represents a major challenge to pattern recognition research community. From person to person human faces are similar in structure with minor differences. They are actually within one class of human face. Facial expressions, Lighting condition changes & pose variations further complicate face recognition task because one of complex problems in pattern analysis. Research proposed a unique concept faces may be recognized using Neural Network. To speed up searching process face prefiltering technique is proposed. Investigation on proposed concept is conducted that covers all aspects on human face recognition, for example face recognition, under controlled & size variation, ideal condition, manipulating facial expression, manipulating lighting condition & manipulating pose.

[II] SOFT COMPUTING

In computer science, **soft-computing** is use of inexact solutions to computationally hard tasks like solution of NP-complete problems, for which there is no known algorithm that may compute an exact solution in polynomial time. Soft-computing is different from conventional (hard) computing in that, unlike hard computing, it is tolerant of uncertainty, imprecision, partial truth, & approximation. In effect, role model for soft computing is human mind.