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AN INTELLECTUAL SYSTEM FOR HUMAN PERSONALITY IDENTIFICATION USING SOFT - COMPUTING

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ABSTRACT

In Biometric System, writer identification is a very common and consistent, but most of the writer identification system supposes the text to be fixed like signature based writer identification. But in signature based writer identification sometime arise problems because signature of a person not always available such as in case of crime investigation. However, the handwriting of a person has some feature which is unique to every person which can be used for personality identification. The Graphology technique also used for the personality identification Graphology is the analysis of the physical characteristics and patterns of handwriting purporting to be able to identify the writer, indicating psychological state at the time of writing, or evaluating personality characteristics. In this paper offline personality identification has been purposed. And these features used for identification like segmentation, preprocessing, feature extraction, skew angle, zones of handwriting, statistics, feature, slant angle , random and Hough transforms and soft computing. A back propagation neural network classifies the handwritten text to a list of known writers.

Keywords: Baseline, Slant, Preprocessing, Segmentation, Randomtransform, Houghtransform.

I. INTRODUCTION

Handwriting analysis is a technique to modeling human activities are to judge the human as a device. There are very large numbers of human mental states and this handwriting analysis which used to determine the types of mental state. The research based on the result or observation that although human behaviors such as handwriting, speech, hand gestures and even American Sign Language. Handwriting work as an indicator, which indicates personality and behavior of humans, for example, interviewing, recruitment, selection, team-building, counseling, and career-planning. The need of human personality recognition is more important in the modern word. Through this human can simplify their jobs and they are able to solve typical problems. Graphology or Handwriting analysis both are the scientific scheme of recognizing, and distinguish behavior over the movements and patterns inform with the handwriting. During the ancient Indian civilization, it (handwriting analysis) was very common to identify the human behavior. In Graphology, handwriting process is analyzed through structural graphic elements in which the order to derive information about the writer's personality. Handwriting exposes the true behavior, including the defenses, emotional outlay, fears and many other individual traits. Handwriting is referring to as intelligence or brain writing and each personality

characteristic is represented by neurological or brain pattern. Each neurological or brain pattern produces a distinctive neuromuscular movement. And it is the same for every people who have that specific personality trait. When writing, these little movements occur instinctively. The Below figure 1.1 shows the psychological behavior of human through handwriting.

1.1 The Handwriting Analysis Term: there is some following term which is used in handwriting which are as follows

a) Zones
b) Connections
c) Slant
d) Spacing
e) Margin
f) Letter size
g) A large middle zone
h) Small middle zone
i) Upper zone extension
j) Speed
k) Clarity
l) Pressure

II. BIOMETRIC

The word biometric made of two Greek word "bios" and "metrikos", the terms "bios" related to life and "metrikos" related to measure. Biometric is the science of equipment which used measures and analyzes the biological data. Some of the body characteristics like handwriting, face, gait, voice, finger print, iris, handwriting, DNA are defined by the biometry. Since today, a wide variety of applications require consistent authentication schemes to authenticate the identity of an character, recognizing humans based on their body behavior and characteristics became more and more interesting in emerging equipment applications.

The basic architecture of biometrics related to physiological and behavioral is below

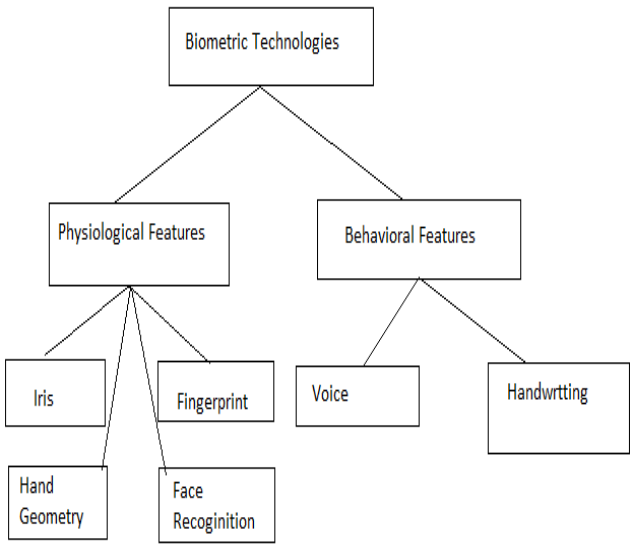


Fig : Categories of Biometric

III. LITERATURE REVEIEV

In our literature review, mainly will be focus on forensic techniques , which can provide evidence played a key role , especially in the fraud, identity theft and murder , as well as forensic experts to determine how the author, overbearing , among other qualities.

Huber RA, Headrick AM (2009) is determining Forensic investigators by using handwriting technology and these handwriting technologies are used to determine personality behavior of an individual. To check "job applications, marriage compatibility recruitment". And career guidance, motivate workers, and child development" is used graphology like handwriting analyzing in different company [1]. It also pointed out that the development of environment, mental health, an individual's social status and cognitive abilities is part of a person's motivation to participate in aberrant behavior. And some, sociological biological and psychological theory has been used as the primary classification explains deviant behavior explained.

Delis and Coins et .al (2010) are researcher propose that when using individual factors to explain unexpected behavior, and in this experts must take into consideration the individual's personality disposition, construction, level of psychopathic and self-control, of nature. An individual's community development is said to be one of the biggest element in predicting aggressive criminal concert [2]. Contact for crime causation between imperfect social tendencies , you can also check the social practices and is an eccentric one's social environment or social relations formed in the conventional system for evaluation. To determine the characteristics corresponding to a particular handwriting personalization, expert study of different handwriting illustrations from unknown and known sources in large part. In addition to analysis of human handwriting samples to test, in the handwriting there have been recently developed to support in the handwriting experts to carry out the tedious task of many technologies. Various studies have confirmed that handwriting analysis personality assessment methods, the use of experimental science and technology.

In our study, we investigated the status of technology and how to assess a person's character be useful, these methods can help handwriting expert. Moreover, although these types of technologies are offered, so the handwriting assessment cannot be completely replaced by the automation system. Human interaction is still required for digitizing / processing because the scanned documents which can be evaluated.

Frye v. United States [3], decided in 1923, the researcher, Expert opinion or author depends on a scientific technique is barred unless the procedure is generally accepted as unfailing in the appropriate scientific community. And this technique basically developed in 1923.

V. Merrell Dow Pharmaceuticals [4] Daubert, et al., decided in June 28, 1993: To admit expert opinion based on scientific technique in court, the procedure needs to be established based on peer review, error rates, acceptability and testing,. Daubertis considered being innovative ruling in that it requires the judge to perform a gate-keeping function before scientific testimony is admitted.

U.S. v. Starzecpyzel[5], decided in April 3, 1995 and he has given many technique: (a) forensic document examination capacity is Daubert case, within the scope of the reliability standards set forth therein of scientific experts to testify; (b) the testimony of forensic document examination is accepted as proof of unscientific or skill; (c) may affect jury meet reliability standards adopted by the forensic science testimony does not need to exclude testimony can be derived from view.

V. Joiner et al. General Electric Co., et al. [6], decided in December 15, 1997: Expert testimony that is both reliable and relevant must be admitted, and testimony that is unreliable or irrelevant must be excluded. A

weight-of-evidence methodology is applied when evidence of other expert testimony is admitted, then it is acceptable.

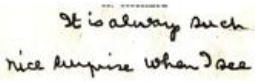
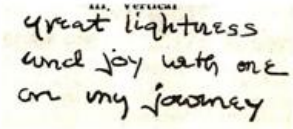
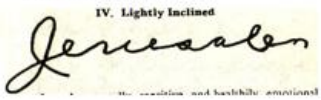
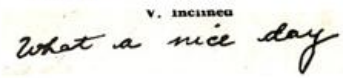
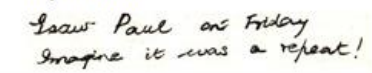
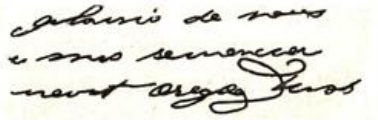
V. Carmichael et al. Kumho Tire Co., Ltd., et al. [7], decided in March 23, 1999: In this the author applies likewise well to methodical, technical and other focused knowledge for Reliability standard like (does the any application of the law produce reliable results)

United States v. Paul [8], decided May 13, 1999: Handwriting Analysis qualify as expert indication, so Daubert guidelines hospitalized sable. It auxiliary provides that if an observer qualified as a connoisseur on handwriting analysis, such testimony may help the judges. In addition, the jury's ability to achieve the same visual comparison of experts "to undueunfairness, from installation to condense the risk of an expert's baffling".

Abdul Rahiman M, Diana Varghese, Manoj Kumar G [9]2013"Handwritten Analysis Based Individualistic Traits Prediction" This paper aims to achieve offline, writer independent handwriting analysis system "habit" (handwriting analysis based on individualistic trait prediction), which serves as a tool to extract automatically predict a writer's writer's personality from handwriting sample features of scanned images as input. These features include tilt baseline, pen pressure, tilt, and the size of the writing of the letter.

IV. RESULT

The seven features of handwriting which are represented in the Table below. And these features extracted from handwriting sample which describe the behavior of person like Self Conscious, Too Reserved, independent sensitive, jealous, romantic.

very-reclined	1. Self Conscious
Reclined 	*2. Too Reserved*
Vertical 	3. Independent
lightly inclined 	4. Sensitive
Inclined 	5. Friendly
very inclined 	6. Jealous
acutely inclined 	7. Romantic

V. CONCLUSION AND FUTURE WORK

5.1 Conclusion

There are always concerns about adapting to new technologies. In this work, the problem of personality identification based on handwriting has been studied using many techniques. This approach is text independent and basically focuses on the slant of handwriting. In these technique features are extracted from images or text line that characterized an author and then used for personal identification. The need for security in different domains and the ability of biometric technologies to grant them make a good game to keep expanding and improving these techniques. In a world that is becoming increasingly automated day grows the desire to increase and improve methods of identification and authentication due to the current identity fraud that has a very high cost. One of the most fundamental questions we do is about how practical. It must be a biometric system or as discriminate information is available in the signal input. Unfortunately, these questions have been answered in a very limited way in all biometric modalities. Therefore, end-users and the domain where apply any of these technologies, they should be those who decide which of the systems existing is the one that should put into practice more. The aim of this study was to show a complete methodology to develop a biometric system using as a fundamental part of the right people. The objective was met satisfactorily, because as you can see from the results, the system it was reliable and very easy to implement, besides that did not require electronic technology very expensive. Another objective was to arouse the concern of developing more efforts in this area (i.e, decision of the reader), because there is a considerable amount of literature public or free for the development of biometrics using hand geometry a most are trademarks or proprietary systems. The feature extraction system perfectly modeled surveyed measures that keeps all the information that helps to have a better discrimination and to have a Top rank between classes.

5.2 Future work

We have identified some aspects that would help improve the application:-

a) Few individuals were used as evidence, but it is thought to work with a number of many more samples to test for the application.
b) In each of the hands only 18 steps were taken, but it is possible to compute a number larger for greater discrimination in the hands of different individuals.
c) In this work and others reported in the literature, it has not been taken into consideration the coloration of the skin, so you try to design a method that takes into account the intensities of the pixels belonging to the hand using a uniform lighting.
d) Although this application allows a degree of rotation and translation, it is possible to make it invariant to rotation and translation in a greater degree.
e) Having a more controlled environment, it ie a uniform lighting when taking images of individuals.
f) Implement the system with real-time response
g) Personality identification can work on other language like Hindi.
h) It can be also used other zones of handwriting.

5.3 Limitation

a) It cannot used all types of handwriting.
b) It can be found only English language.

c) This algorithm not be work on middle and upper zone of the handwriting.

d) It's not work on the cursive handwriting.

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