

Importance of Iris Recognition against Technology Failure

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ABSTRACT: *It is undeniable that among the science and technology the role and importance of iris recognition is most reliable and accurate biometric recognition process. Iris recognition captures the iris region in the particular portion of an eye. The capture of the iris pattern should be done accurately. In this paper I explained about the importance of iris recognition in Indian Armed Weapons specially used in artillery guns of Indian army against technology. The iris coded of artillery soldiers are encoded with biometric devices is attached to the artillery weapons. It seems that the artillery gun will be triggered only when the iris pattern is matched with iris codes.*

By applying this biometric methodology we can protect Indian Armed Weapons in highly secure manner and also Indian Armed Weapons are utilize only by Indian soldiers. Therefore choosing the iris recognition is highly efficient and secure level of Future Warfare.

Keyword: *Artillery, Biometrics, Computation, Iris Recognition, Image Processing.*

I. INTRODUCTION

Iris recognition is the process of recognizing the individual of the personal by analyzing and examination of the random pattern in Iris. Iris recognition is the most advance and reliable fast access recognition technique used to achieve our task in limited period of time[4]. Applying the iris recognition approach to the Indian armed weapons is the most advance, at the same time it will leads our nation to the high level of security. Indian Armed services requires biometrics and bio informatics dependent identification of biological weapons, epidemiological and environmental monitoring and prevention early warning systems of agroterrorism. By analyzing the theatre activities of past wars in India is very challengeable and also is a battle wining factor. For example In 1999 kargil war, the war was fought and win by both infantry and artillery. My paper explains the importance of Iris recognition in one of reliable artillery weapons name as BOFORS FH77-FIELD HOWITZER [8].

BOFORS is the Light Firing Gun hold the extreme line of control in war situation. It can be switch over to any type of Fields or regions like Thar Desert of Rajasthan and Siachen Glacier of Jammu and Kashmir [8]. Also it will hold the Defense line very closer to Neighbor countries Defense forces which made easily to capture our weapons during the war time. Iris recognition made the Light Firing Gun to highly protective. BOFORS guns cannot able to see their target but they can achieve their target in high accuracy with help of artillery observation post. Artillery Guns owing its capability of destroying the enemies with firing power [8]. After Kargil War the Indian army was modernized. DRDO scientist and researchers combined with Military Engineers modernized the simulation and moralization of Light Firing Gun [7]. But my research paper used to secure these Firing weapons in Biometric computation for modern warfare.

II. HISTORY AND EVOLUTION OF IRIS RECOGNITION

The iris recognition was first proposed by Dr Frank Burch, an ophthalmologist in the year 1936. In 1985 Dr Leonard flom & Aran safir made further research [1]. In 1987 Dr John Daugman takes his research with some advance technologies. After completing his A.B and Ph.D degree from Harvard University, Cambridge in 1976 and 1983 respectively, he introduced more techniques which really interacted towards the Iris recognition [1]. He is the inventor of iris recognition for personal identification.

In 1993, Defense Nuclear Agency started a research work with thesis of Dr John Daugman[1]. In 1995 the first Iris recognition commercial product is introduced. In 2005, Dr John

Daugman and his team provided marketing opportunity to the peoples[1]. This shows that Iris recognition is very favorable with technology and applicable to the people for their day-to-day requirements [1]. Presidential directive calls for mandatory government wide personal identification card for all federal employees and contractors [1].

US patent on iris recognition concept expires 2005 Iris on the Move™ is announced at Biometrics Consortium Conference The Innovations and Thesis of Dr John Daugman in not expired until the year of 2011[1]. Dr John Daugman research work is an open platform to raise the research work of Iris recognition to younger generation scientists and innovators.

III. PRICIPLES OF IRIS RECOGNITION

Iris is the vascular filament which is present in the out bound layer of the retina. This is also a kind of muscular organism but generally it is the form of a filament with number of nerves patterns formed one another. Even then eye is the most important organ of a human being and iris is the important organ of the eye it seems as much like a retina pattern. Iris is decides the structure of the eye ball. The size, shape, visual capacity and colored region are to be identified by the cell random pattern of the iris. This sense is easily making us to identify the iris difference within the humans [3] [2]. The analyzing and implementing of iris recognition is examined by the infrared rays. The using of infrared rays are more sufficient energy and cause photo chemical effects [2]. The principle behind the iris recognition is based as same as capturing the picture, detecting using the X-rays as well. But the iris recognition is deals with the thinnest softest portion of the human organ. With the beam of IV rays, Iris recognition components are more harmful and sufficient to human eyes also it doesn't cause any serious injury to the eye.

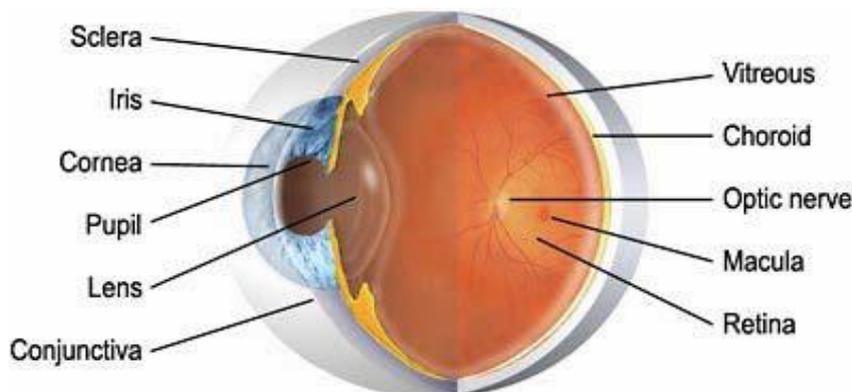


Fig.1 Internal structure of a Human eye

IV. SIMULATION OF IRIS RECOGNITION

The first process involves in the iris recognition is capturing of iris patterns of the related human then the capture patterns is converted into to computational frames by using Image processing which converts the patterns into bit coded digits (namely machine language). Image processing will converts the pattern in one form to another without changing its original structure and further it is extracted the iris pattern from the capture. The iris of 'n' (counting may depends on the number of required persons) number of persons is have to be stored in Database which is suitable for retrieving process[5]. If the iris pattern is recognized stored in the database, then the database manager will indicates the matches of the iris pattern to visible [6]. Then the pattern will be authenticated or unauthenticated by the recognizer.

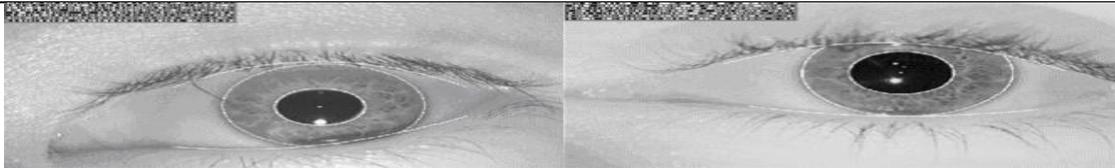


Fig.2 Actual Identification of an Iris pattern

The captured iris patterns are recognized by iris recognizer and examined whether pattern is authenticated or imposter. The iris recognizer will recognize and computes the iris patterns even the eye ball will be affected with eye diseases and infections.

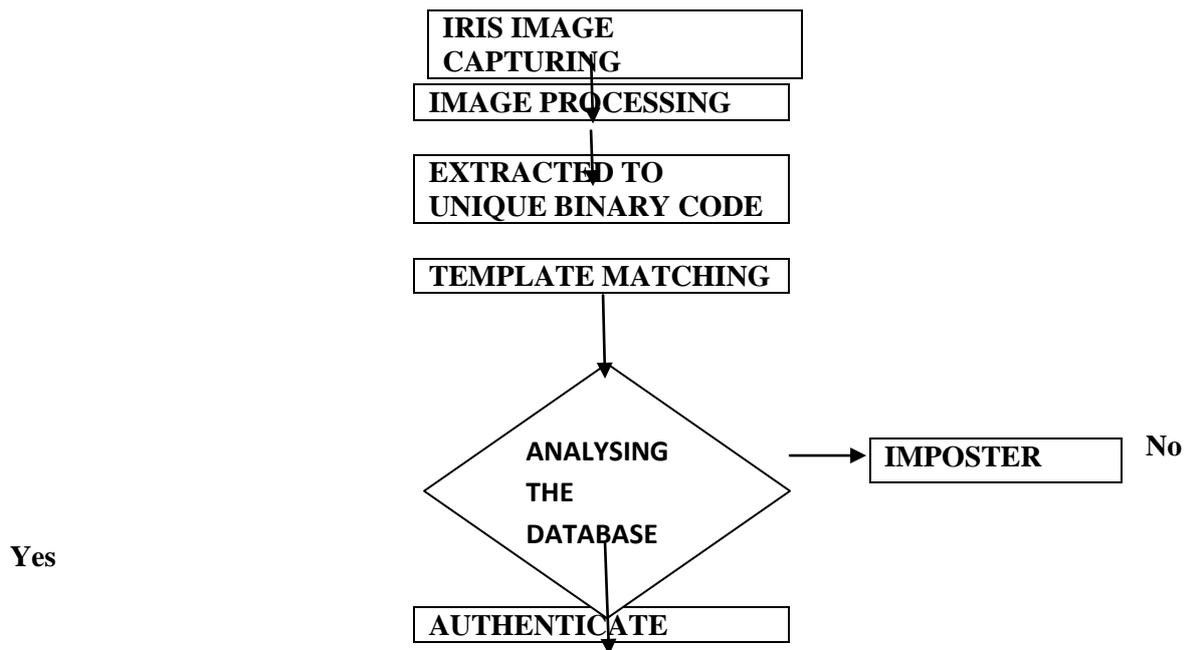


Fig.3 Simulation of Iris recognition

Only authenticate iris pattern is converted into Unique Binary code representation by process of image processing.

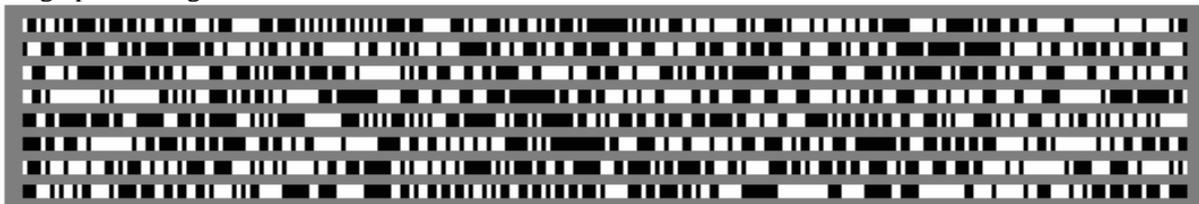


Fig.4. Iris pattern with its Unique Binary code representation

V. SECURE TRIGGERING OF LIGHT FIRING GUN BY IRIS RECOGNITION

In artillery regiment of Indian army three Light firing guns are more important during the war namely,
 1.1. 105mm Indian Field gun – Targeting the destination within 10kms of ranging.
 5.2. 130mm MK-46 Towed Field Guns – Targeting the destination of 20kms of ranging
 5.3. 155mm - BOFORS FH-77 FIELD HOWITZER- Targeting the destination of 20km, 30km and beyond.

My paper is the triggering the iris the BOFORS guns by iris recognition through layering regions. BOFORS are the light firing guns used in high attitude, reliable war situation mainly to destroy the aircrafts, missiles and airvehicles around their surveillance. The Biometrics device which has the iris pattern is fitted with the ignition button. When the iris pattern of an Indian soldier is fired the gun . The iris recognition is fitted with the layeringsection as Recuperator is preferable. An every Light Firing Gun must have five soldiers. So iris pattern of five soldiers are recognized and stored it in the biometric device. The iris pattern is to be changed as per the soldiers.



Fig.5. 155mm - BOFORS FH-77 FIELD HOWITZER in Indian Army

VI. IRIS RECOGNITION – A SOLUTION FOR TECHNOLOGY FAILURE IN INDIAN ARMED FORCES

Nowadays Indian Armed Forces, Military Engineering Corps are using modernized and highly reliable weapons. So it's our duty to protect our weapons & weapons system from the countries and other anti social activities[7]. The accurate and securable war weapons are authenticate and protected only by the means of Biometric System as Iris recognition when compared with other finger, palm, and speech recognition process. In future the iris recognition will be the global protection for Indian armed forces in future warfare.



Fig.6. Iris recognition technique in layering region of an Artillery Weapon

VII. CONCLUSION

IRIS RECOGNITION has been widely used as a form of identification of iris pattern for many years and is well established in defense technology to empower the Nation security. The biometric applications of iris recognition continue to increase the growth of armed weaponry more securable and also it would be a prices fall. The supporting systems enhanced for the promotion of iris recognition should be taking charged and upgrade as per the generation. This paper is useful for the engineering corps and defence scientist for their references and implementation iris technology in defence weapon system. IRIS RECOGNITION is the only security concerns with biometric identification and authentication systems against the other technology recognition failures. Iris recognition is more important to secure our weapons in future information warfare, cyber warfare and also protective measure for technological warfare.

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