



## REVIEW ON ENHANCING IRIS BASED SECURITY SYSTEM USING EDGE DETECTION MECHANISM

Diksha Chawla, Research Scholar, Department of ECE, IJET

Kapil Sachdeva, Assistant professor, Department of ECE, IJET

### Abstract

In principle, the processing of personal data involving the use of a biometric system is considered by privacy experts to be only justified in places demanding a high level of security and strict identification procedures. 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. Biometric systems include applications making use of biometric technologies and which allow the identification automatically, verification or authentication of a natural person. In this research we have discussed Iris Recognition Technology using edge detection mechanism.

**Keyword**—Iris recognition, Biometrics, Edge detection, Signal System, Image, Image Segmentation, localization.



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### I. Iris Recognition Technology

The iris-scan process begins with a photograph. A specialized camera, typically very close to the subject, not more than three feet, uses an infrared imager to illuminate the eye and capture a very high-resolution photograph. This process takes 1 to 2 seconds.

**Iris recognition** is an automated method of biometric identification that uses mathematical pattern-recognition techniques on video images of one or both of the irises of an individual's eyes, whose complex random patterns are unique, stable, and can be seen from some distance.

Not to be confused with other, less prevalent, ocular-based biometric technologies such as retina scanning, iris recognition uses video camera technology with subtle near infrared illumination to acquire images of the detail-rich, intricate structures of the iris which are visible externally. Digital templates encoded from these patterns by mathematical and statistical algorithms allow the identification of an individual or someone pretending to be that individual. Databases of enrolled templates are searched by matcher engines at speeds measured in the millions of templates per second per (single-core) CPU, and with remarkably low false match rates.

Several hundred millions of persons in several countries around the world have been enrolled in iris recognition systems, for convenience purposes such

as passport-free automated border-crossings, and some national ID systems based on this technology are being deployed. A key advantage of iris recognition, besides its speed of matching and its extreme resistance to false matches, is the stability of the iris as an internal and protected, yet externally visible organ of the eye.

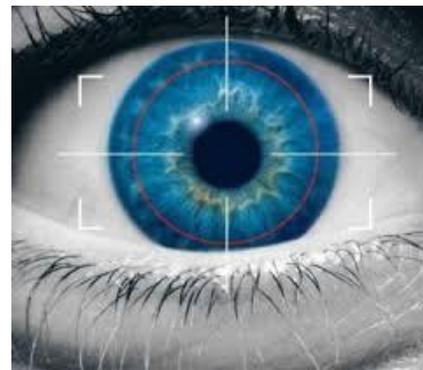


Fig 1: Human eye

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