

METHOD FOR PROVIDING GENERIC RELIABILITY TO OBJECTS

Mrs. Amrita Verma, Dept. of Computer Science Engineering

Dr. C.V. Raman University, Bilaspur

Abstract

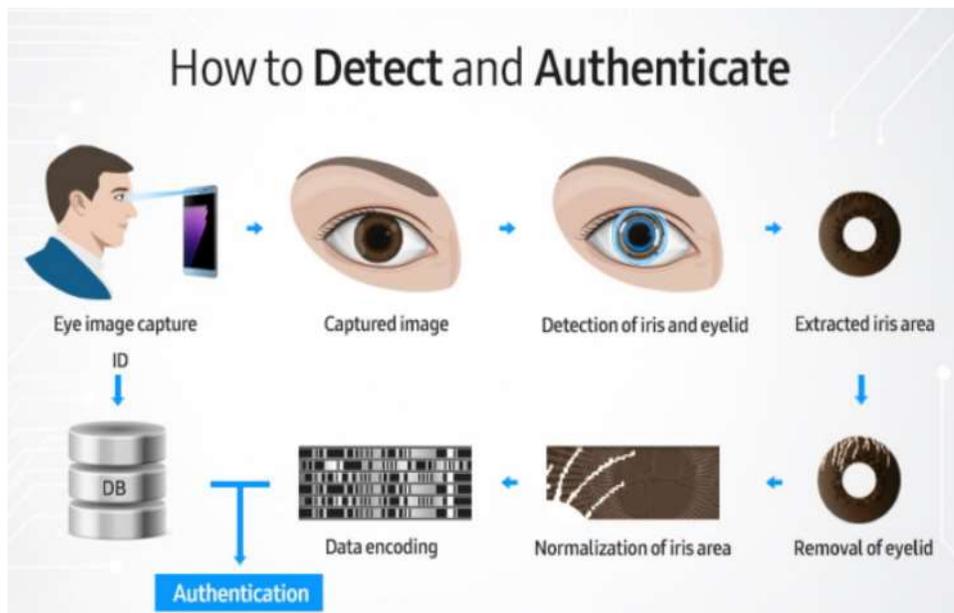
The proposed invention relates to a method for providing generic reliability to objects, comprising steps of: initially scanning iris of a person to obtain scanned images of iris, processing obtained scanned images of the person and comparing the same with stored images present in database, generating two icons, such as first and second icons, selecting first icon and successfully matching real time scanned images with stored images, selecting second icon and matching unsuccessfully and scanning the iris of the same person, recording heart rate of the person from scalp of the person to obtain heart signals, pre-processing signals and authenticating the pre-processed signals with stored signals present in database, generating two icons, such as first and second icons, selecting first icon, successfully matching real time signals with stored signals in database and unlocking doors of the containers, selecting second icon and matching unsuccessfully and again recording heart rate of the person.

Keywords: authentication, heart rate, iris, database, security, objects.

1. Introduction

Security systems are basically fabricated to provide safeguard to object used for carrying and containing devices such as travelling bag, bank lockers and door locks in home and also for money containing devices[1], such as pay telephones, vending machines and bill changers, which must be periodically accessed by a collector in order to retrieve the funds accumulated in the device[2]. They are broadly classified into four parts, such as monitored alarm system, unmonitored alarm system, wireless alarm system and electric current home alarm system[3]. Previously the method used for providing security to objects was carried out by using fingerprint detection technique. As the skin of fingers contains friction ridges, no hairs, no oil glands, and lot of sweat pores[4]. The pattern of ridges is unique and persistent for every person thus they were considered as personal identification during biometric authentication (or realistic authentication)[5]. It does not

take consideration when the person physically changes as in the manual labor factories, as the employees were usually working with their hands due to which sometimes their fingers were scratched or rough which could lead to miss-reading of fingerprints during biometric authentication and sometimes also lead to false rejection when the person do not place their finger at right spot or place the right finger instead of left one and vice-versa. In order to overcome above mentioned problem there is need to implement method that enhances the current security process of objects in order to reduce the chances of malicious attack[6]. It is cost-effective in nature and cannot be easily detected by the theft as every individual is having different iris and heart rate to enhance the security of the objects[7].



2. Working

The proposed invention relates to a method for enhancing the reliability of objects by unlocking the doors of locable storage containers using personal authentication information, such as iris and heart rate of the person[8]. The method is develop to increase the security of objects from malicious attack. First of all the iris of the person is scanned out by capturing the images of the person iris as a unique identification trait. After scanning the iris of the person, the obtained images are processed and later the real time processed images are compared with stored database scanned images. After comparing the real time images, when the initializing value I is equal to 1, then real time

images are successfully matched with the stored images, and later the heart rate of person is recorded. If the real time scanned images are not successfully matched with the stored images present in database than a new condition is generated in which initializing counter i is equal to sum of i plus 1 ($i=i+1$). After scanning the iris of the person, the heart rate is recorded. It is designed for tracking state of heart during different phases of life. On comparing the real time generated electrical signals with stored database signals. If the real time generated signals are successfully matched with stored database signals than the doors of the storage container is successfully unlocked.

3. Result and conclusion

The method is implemented to increase the security of objects, thereby protecting them from chances of theft. It is basically two level security process. Initially iris of the person is scanned and sequentially real time images of scanned iris is compared with the stored database images. In second level the heart activity of the person is recorded and later the generated signals are compared with the stored database signals to successfully unlock the doors of the storage container.

Reference

- [1] N. T. T. Tu and H. Q. Thang, "Overall security solutions for OPC UA based monitoring and control application," in *Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, LNICST*, 2014.
- [2] K. Jung, S. Park, and S. Park, "Hiding a needle in a haystack: Privacy preserving apriori algorithm in MapReduce framework," in *PSBD 2014 - Proceedings of the 1st International Workshop on Privacy and Security of Big Data, co-located with CIKM 2014*, 2014.
- [3] J. Galbally, S. Marcel, and J. Fierrez, "Image quality assessment for fake biometric detection: Application to Iris, fingerprint, and face recognition," *IEEE Trans. Image Process.*, 2014.
- [4] K. B. Raja, R. Raghavendra, M. Stokkenes, and C. Busch, "Multi-modal authentication system for smartphones using face, iris and periocular," in *Proceedings of 2015 International Conference on Biometrics, ICB 2015*, 2015.

- [5] T. Thomas, A. George, and K. P. I. Devi, "Effective Iris Recognition System," *Procedia Technol.*, 2016.
- [6] H. Rai and A. Yadav, "Iris recognition using combined support vector machine and Hamming distance approach," *Expert Syst. Appl.*, 2014.
- [7] S. Thavalengal, P. Bigioi, and P. Corcoran, "Iris authentication in handheld devices-considerations for constraint-free acquisition," *IEEE Trans. Consum. Electron.*, 2015.
- [8] D. Kim, Y. Jung, K. A. Toh, B. Son, and J. Kim, "An empirical study on iris recognition in a mobile phone," *Expert Syst. Appl.*, 2016.