

# Face and Liveness Detection Based Smart Bank Locker

Seema Francis Bansode<sup>1</sup> and Dr. R. G. Dabhade<sup>2</sup>

Student, Department of VLSI & Embedded System (E&TC)<sup>1</sup>

Professor, Department of VLSI & Embedded System (E&TC)<sup>2</sup>

Matoshri College of Engineering and Research Centre, Eklhare, Nashik, Maharashtra, India

**Abstract:** *With the increasing theft in banks, the security has become an important aspect in banking region. Most of the Bank lockers are currently protected by key locking, some password-based locks or using some digital locks which is insecure and unreliable. So, in this paper we are implementing bank locker using face recognition system. Face recognition is an effective and successful security technique whose accuracy can be improved by combining other technologies. For facial recognition, this project uses the CNN algorithm.*

*In this project, only authenticated user can access the lockers as faces are stored for the individual identity of a person. Facial recognition alone cannot determine whether the person is real or not. Therefore, liveness detection is implemented. In liveness detection, the system detects if it interacts with a real person or a spoof artefact used by other person such as a face photo. To detect whether the person is live or not the project uses eye blink detection. The project identifies whether the user is authentic or not. If not then, the locker will not open instead it will raise an alert and it will send a text SMS to the admin that somebody is trying to open their locker and immediately the system will capture photograph of that person and that photograph will be emailed to the user. In this way, the system provides high security, theft protection and alert of bank locker.*

**Keywords:** Facial recognition

## REFERENCES

- [1]. "Face Spoofing Detection From Single images Using MicroTexture Analysis", Maatta, A. Hadid, M. Pietikainen.
- [2]. K. Singh, P. Joshi and G. C. Nandi, "Face recognition with liveness detection using eye and mouth movement".
- [3]. G. Pan, L. Sun, Z. Wu, and S. Lao, "Eyeblick - based anti-spoofing in face recognition from a generic webcam," in Proc. IEEE 11th Int. Conf. Comput. Vis. (ICCV), Oct. 2007, pp. 1-8.
- [4]. J. Peng and P. P. K. Chan, "Face liveness detection for combating the spoofing attack in face recognition," 2014 International Conference on Wavelet Analysis and Pattern Recognition.
- [5]. Akhtar, Zahid & Micheloni, Christian & Foresti, G.L.. (2015). Biometric Liveness Detection: Challenges and Research Opportunities. IEEE Security & Privacy. 13. 63-72. 10.1109/MSP.2015.116.
- [6]. D. Garud and S. S. Agrwal, "Face liveness detection," 2016 International Conference on Automatic Control and Dynamic Optimization Techniques (ICACDOT), 2016.
- [7]. M. Coşkun, A. Ucar, O. Yildirim and Y. Demir, "Face recognition based on convolutional neural network," 2017 International Conference on Modern Electrical and Energy Systems (MEES), IEEE; 2017
- [8]. Li, L.; Feng, X.Y.; Jiang, X.Y.; Xia, Z.Q.; Hadid, A. Face anti-spoofing via deep local binary patterns. In Proceedings of the IEEE International Conference on Image Processing, Beijing, China, 17-20 September 2017; IEEE: Piscataway, NJ, USA, 2017; pp. 101-105.