

SpringerLink

Springer Nature is making Coronavirus research free. [View research](#) | [View latest news](#) | [Sign up for updates](#)

Information Science and Applications 2018

International Conference on Information Science and Applications

ICISA 2018: Information Science and Applications 2018 pp 229-237 | [Cite as](#)

Fingerprint Biometric Authentication Based Point of Sale Terminal

Authors

Authors and affiliations

Kennedy OkokpujieEmail authorEtinosa Noma-OsaghaeOlatunji OkesolaOsemwegie OmoruyiChinonso OkerekeSamuel JohnImhade P. Okokpujie

1.

Conference paper

First Online: 24 July 2018

1

Citations

561

Downloads

Part of the Lecture Notes in Electrical Engineering book series (LNEE, volume 514)

Abstract

Retail businesses that are not transacted online still represent a substantial amount of retail deals that are closed on a daily basis. Retail business owners and customers continue to explore other means of ensuring payments made with Point of Sale (POS) devices are done securely. This paper proposes the incorporation of fingerprint biometric recognition as an additional layer of protection to the customary pin and password requirements to gain permission to pay for goods purchased and services rendered using point of sale devices. The proposed fingerprint biometric recognition point of sale device has zero false match and false non-match rate. This strengthens the present authentication process that makes use of pins and passwords that are prone to fraud and solidifies the trust and confidence users place on point of sale devices.

Keywords

Biometric Point of sale Fingerprint Recognition Authentication

This is a preview of subscription content, log in to check access.

Notes

Acknowledgements

This paper was sponsored by Covenant University, Ota, Ogun State, Nigeria.

Further Work

A conscious and active incorporation of a liveness detector into the designed and implemented fingerprint biometric POS device.

References

1.

Okokpujie K, Uduehi O, Edeko F (2015) An enhanced biometric ATM with GSM feedback mechanism. *J Electr Electron Eng* 12:68–81

Google Scholar

2.

Okokpujie K, Noma-Osaghae E, John S, Ajulibe A (2017) An improved iris segmentation technique using circular Hough transform. In: *International conference on information theoretic security, 2017*, pp 203–211

Google Scholar

3.

Kaur R, Sandhu PS, Kamra A (2010) A novel method for fingerprint feature extraction. In: *2010 international conference on networking and information technology (ICNIT), 2010*, pp 1–5

Google Scholar

4.

Badejo JA, Atayero AA, Ibiyemi TS (2016) A robust preprocessing algorithm for iris segmentation from low contrast eye images. In: *Future technologies conference (FTC), 2016*, pp 567–576

Google Scholar

5.

Atuegwu C, Okokpujie KO, Noma-Osaghae E (2017) A bimodal biometric student attendance system
Google Scholar

6.

Okokpujie K, Noma-Osaghae E, John S, Jumbo PC (2017) Automatic home appliance switching using speech recognition software and embedded system. In: 2017 international conference on computing networking and informatics (ICCNI), 2017, pp 1–4

Google Scholar

7.

Okokpujie K, Noma-Osaghae E, John S, Oputa R (2017) Development of a facial recognition system with email identification message relay mechanism. In: 2017 international conference on computing networking and informatics (ICCNI), 2017, pp 1–6

Google Scholar

8.

Tukur A (2015) Fingerprint recognition and matching using Matlab. Int J Eng Sci (IJES) 4:01–06

Google Scholar

9.

Okokpujie KO, Uduehi OO, Edeko FO (2016) An innovative technique in ATM security: an enhanced biometric ATM with GSM feedback mechanism. J Electr Electron Eng (JEEE), vol 12, pp 68–81

Google Scholar

10.

Barham ZS, Mousa A (2011) Fingerprint recognition using MATLAB. Bachelor's Dissertation, vol 5, p 17

Google Scholar

11.

Daramola SA, Adefuminiyi MA, John TM (2016) Review and proposed methodology for a lecture attendance system using neural network. In: Proceedings of the world congress on engineering

Google Scholar

12.

Jain AK, Feng J, Nandakumar K (2010) Fingerprint matching. Computer 43

CrossRefGoogle Scholar

13.

Okokpujie K, Olajide F, John S, Kennedy CG (2016) Implementation of the enhanced fingerprint authentication in the ATM system using ATmega128. In: Proceedings of the international conference on security and management (SAM), 2016, p 258

Google Scholar

14.

Dhundhwal P, Maan N (2014) Design and implementation of enhancement feature extraction and matching of a fingerprint image. *Int J Eng Trends Technol* 13:184–190

CrossRefGoogle Scholar

15.

Okokpujie K, Etinosa N-O, John S, Joy E (2017) Comparative analysis of fingerprint preprocessing algorithms for electronic voting processes. In: International conference on information theoretic security, 2017, pp 212–219

Google Scholar

16.

Majekodunmi TO, Idachaba FE (2011) A review of the fingerprint, speaker recognition, face recognition and iris recognition based biometric identification technologies

Google Scholar

17.

Mansfield-Devine S (2013) Biometrics in retail. *Biom Technol Today* 2013:5–8

CrossRefGoogle Scholar

18.

Ghosh S, Majumder A, Goswami J, Kumar A, Mohanty SP, Bhattacharyya BK (2017) Swing-Pay: one card meets all user payment and identity needs: a digital card module using nfc and biometric authentication for peer-to-peer payment. *IEEE Consum Electron Mag* 6:82–93

CrossRefGoogle Scholar

19.

Masalkar PA, Singh U, Shinde S (2015) 2D barcode based mobile payment system with biometric security. *Transportation* 2

Google Scholar

20.

Garg RK, Garg N (2015) Developing secured biometric payments model using tokenization. In: 2015 international conference on soft computing techniques and implementations (ICSCIT), 2015, pp 110–112

Google Scholar

21.

Alimi V, Rosenberger C, Vernois S (2013) A mobile contactless point of sale enhanced by the NFC and biometric technologies. *Int J Internet Technol Secur Trans* 5:1–17

CrossRefGoogle Scholar

22.

Etinosa N-O, Okereke C, Robert O, Okesola OJ, Okokpujie KO (2017) Design and implementation of an iris biometric door access control system. In: *Computational science and computational intelligence (CSCI), 2017, Las Vegas, USA*

Google Scholar

23.

Okokpujie KO, Etinosa N-O, Okesola OJ, Samuel JN, Robert O (2017) Design and implementation of a student attendance system using iris biometric recognition. In: *Computational science and computational intelligence (CSCI), 2017, Las Vegas, USA*

Google Scholar

Copyright information

© Springer Nature Singapore Pte Ltd. 2019

About this paper

CrossMark

Cite this paper as:

Okokpujie K. et al. (2019) Fingerprint Biometric Authentication Based Point of Sale Terminal. In: Kim K., Baek N. (eds) *Information Science and Applications 2018. ICISA 2018. Lecture Notes in Electrical Engineering*, vol 514. Springer, Singapore

First Online

24 July 2018

DOI

https://doi.org/10.1007/978-981-13-1056-0_24

Publisher Name

Springer, Singapore

Print ISBN

978-981-13-1055-3

Online ISBN

978-981-13-1056-0

eBook Packages

Engineering

Buy eBook

EUR 213.99

Buy paper (PDF)

EUR 24.95

[Home](#) [Impressum](#) [Legal information](#) [Privacy statement](#) [How we use cookies](#) [Cookie settings](#) [Accessibility](#)
[Contact us](#)

Springer Nature

© 2019 Springer Nature Switzerland AG. Part of Springer Nature.