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Finger Vein Identification Based on Transfer Learning of AlexNet

(Conference Paper)

Fairuz, S., Habaebi, M.H., Elsheikh, E.M.A.

Dept of ECE, Fac. of Eng., International Islamic Univ. Malaysia (IIUM), Jalan Gombak, Kuala Lumpur, 53100, Malaysia

Abstract

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Nowadays finger vein-based validation systems are getting extra attraction among other authentication systems due to high security in terms of ensuring data confidentiality. This system works by recognizing patterns from finger vein images and these images are captured using a camera based on near-infrared technology. In this research, we focused finger vein identification system by using our own finger vein dataset, we trained it with transfer learning of AlexNet model and verified by test images. We have done three different experiments with the same dataset but different sizes of data. Therefore, we obtained varied predictability with 95% accuracy from the second experiment. © 2018 IEEE.

SciVal Topic Prominence

Topic: Biometrics | Feature extraction | finger-vein recognition

Prominence percentile: 88.107

Author keywords

AlexNet | Biometric Identification | Finger vein | Transfer learning

Indexed keywords

Engineering controlled terms: Infrared devices | Infrared radiation | Statistical tests

Engineering uncontrolled terms: AlexNet | Authentication systems | Biometric identifications | Data confidentiality | Finger vein | Finger vein identifications | High securities | Transfer learning

Engineering main heading: Palmprint recognition

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1 Yang, J., Shi, Y., Yang, J.
Personal identification based on finger-vein features

(2011) Computers in Human Behavior, 27 (5), pp. 1565-1570. Cited 43 times.
doi: 10.1016/j.chb.2010.10.029

View at Publisher

2 Hashimoto, J.
Finger vein authentication technology and its future

(2006) IEEE Symposium on VLSI Circuits, Digest of Technical Papers, art. no. 1705285, pp. 5-8. Cited 109 times.
ISBN: 1424400066; 978-142440006-5

3 Yanagawa, T., Aoki, S., Ohyama, T.
Human Finger Vein Images Are Diverse and Its Patterns Are Useful for Personal Identification. Cited 46 times.
Kyushu University

4 Lu, Y., Xie, S.J., Yoon, S., Park, D.S.
Finger vein identification using polydirectional local line binary pattern

(2013) International Conference on ICT Convergence, art. no. 6675307, pp. 61-65. Cited 16 times.
http://ieeexplore.ieee.org/xpl/conferences.jsp
ISBN: 978-147990698-7
doi: 10.1109/ICTC.2013.6675307

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5 Besra, B., Mohapatra, R.K.
Extraction of segmented vein patterns using repeated line tracking algorithm

(2017) Proceedings of 2017 3rd IEEE International Conference on Sensing, Signal Processing and Security, ICSSS 2017, art. no. 8071571, pp. 89-92. Cited 6 times.
ISBN: 978-150904929-5
doi: 10.1109/SSPS.2017.8071571

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6 Meng, G.C., Shahzad, A., Saad, N.M., Malik, A.S., Meriaudeau, F.
Prototype design for wearable veins localization system using near infrared imaging technique

(2015) Proceedings - 2015 IEEE 11th International Colloquium on Signal Processing and Its Applications, CSPA 2015, art. no. 7225628, pp. 112-115. Cited 7 times.
ISBN: 978-147998249-3
doi: 10.1109/CSPA.2015.7225628

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7 Ficke, B.W., Ransom, E.F., Oakes, J.E.
Near-Infrared Vein Visualization in Index Finger Pollicization

(2017) Journal of Hand Surgery, 42 (6), pp. 481.e1-481.e2. Cited 7 times.

http://www.elsevier.com/inca/publications/store/6/2/3/1/4/5/index.htt
doi: 10.1016/j.jhsa.2017.03.039

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8 Istiaque, A.K., Islam, H.M.H., Aishah, R., Zainal, N.
Enhanced vision based vein detection system
(2017) 4th IEEE International Conference on Smart Instrumentation, Measurement and Applications (ICSIMA)

9 Qin, H., Qin, L., Xue, L., He, X., Yu, C., Liang, X.
Finger-vein verification based on multi-features fusion (Open Access)

(2013) Sensors (Switzerland), 13 (11), pp. 15048-15067. Cited 19 times.
http://www.mdpi.com/1424-8220/13/11/15048/pdf
doi: 10.3390/s131115048

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10 Yang, L., Yang, G., Yin, Y., Xi, X.
Finger vein recognition with anatomy structure analysis
(2017) IEEE Transactions on Circuits and Systems for Video Technology, (99), p. 1. Cited 4 times.
March

11 Lee, E.C., Jung, H., Kim, D.
New finger biometric method using near infrared imaging (Open Access)

(2011) Sensors, 11 (3), pp. 2319-2333. Cited 103 times.
http://www.mdpi.com/1424-8220/11/3/2319/pdf
doi: 10.3390/s110302319

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12 Wu, J.-D., Liu, C.-T.
Finger-vein pattern identification using principal component analysis and the neural network technique

(2011) Expert Systems with Applications, 38 (5), pp. 5423-5427. Cited 53 times.
doi: 10.1016/j.eswa.2010.10.013

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13 Kumar, A., Zhou, Y.
Human identification using finger images

(2012) IEEE Transactions on Image Processing, 21 (4), art. no. 6044711, pp. 2228-2244. Cited 202 times.
doi: 10.1109/TIP.2011.2171697

View at Publisher

14 Miura, N., Nagasaka, A., Miyatake, T.
Feature extraction of finger-vein patterns based on repeated line tracking and its application to personal identification

(2004) Machine Vision and Applications, 15 (4), pp. 194-203. Cited 410 times.
doi: 10.1007/s00138-004-0149-2

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15 Yang, J., Shi, Y., Jia, G.

Finger-vein image matching based on adaptive curve transformation

(2017) Pattern Recognition, 66, pp. 34-43. Cited 27 times.
www.elsevier.com/inca/publications/store/3/2/8/
doi: 10.1016/j.patcog.2017.01.008

View at Publisher

16 Liu, F., Yang, G., Yin, Y., Wang, S.
Singular value decomposition based minutiae matching method for finger vein recognition

(2014) Neurocomputing, 145, pp. 75-89. Cited 37 times.
www.elsevier.com/locate/neucom
doi: 10.1016/j.neucom.2014.05.069

View at Publisher

17 Das, R., Piciucco, E., Maiorana, E., Campisi, P.
Convolutional Neural Network for Finger-Vein-Based Biometric Identification

(2018) IEEE Transactions on Information Forensics and Security, 14 (2), art. no. 8395431, pp. 360-373. Cited 2 times.
http://www.ieee.org/products/onlinepubs/news/0705_02.html#5
doi: 10.1109/TIFS.2018.2850320

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18 (2017) Introducing Deep Learning with MATLAB. Cited 2 times.
Mathworks

19 Pedraza, A., Gallego, J., Lopez, S., Gonzalez, L., Laurinavicius, A., Bueno, G.
Glomerulus classification with convolutional neural networks

(2017) Communications in Computer and Information Science, 723, pp. 839-849. Cited 11 times.
http://www.springer.com/series/7899
ISBN: 978-331960963-8
doi: 10.1007/978-3-319-60964-5_73

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20 https://www.mathworks.com/solutions/deeplearning/convolutional-neural-network.html

21 Raghavendra, R.B., Tirunagar, C.
The 1st Competition on Counter Measures to Finger Vein Spoofing Attacks"

22 Syafeeza, A.R., Itqan, K.S., Gong, F.G., Mustafa, N., Wong, Y.C., Ibrahim, M.M.
User identification system based on finger-vein patterns using Convolutional Neural Network

(2016) ARPN Journal of Engineering and Applied Sciences, 11 (5), pp. 3316-3319. Cited 4 times.
http://www.arpnjournals.org/jeas/research_papers/rp_2016/jeas_0316_3805.pdf

23 Liu, W., Li, W., Sun, L.
(2017) Finger Vein Recognition Based on Deep Learning

24 Hong, H.G., Lee, M.B., Park, K.R.
Convolutional Neural Network-Based Finger-Vein Recognition Using NIR Image Sensors"

25 Zeiler, M.D., Fergus, R.
Visualizing and understanding convolutional neural networks
(2014) Proceedings of the European Conference on Computer Vision. Cited 433 times.

26 Krizhevsky, A., Sutskever, I., Hinton, G.E.
ImageNet classification with deep convolutional neural networks

(2012) Advances in Neural Information Processing Systems, 2, pp. 1097-1105. Cited 19063 times.
ISBN: 978-162748003-1

27 Xiao, L.
(2017) Scene Classification with Improved AlexNet Model

28 Gu, S., Ding, L., Yang, Y., Chen, X.
A new deep learning method based on AlexNet model and SSD model for tennis ball recognition

(2017) 2017 IEEE 10th International Workshop on Computational Intelligence and Applications, IWCIA 2017 - Proceedings, 2017-December, pp. 159-164. Cited 5 times.
ISBN: 978-153860469-4
doi: 10.1109/IWCIA.2017.8203578

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Habaebi, M.H.; Dept of ECE, Fac. of Eng., International Islamic Univ. Malaysia (IIUM), Jalan Gombak, Kuala Lumpur, Malaysia; email:habaebi@iium.edu.my
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