Document details

‹ Back to results | 1 of 1

Export Download Print E-mail Save to PDF Add to List More... ›

View at Publisher

Telkomnika (Telecommunication Computing Electronics and Control) Open Access
Volume 17, Issue 1, 1 February 2019, Pages 103-109

Biometric identification using augmented database (Article) (Open Access)

Lionnie, R.[a], Agustina, E.[a], Sediono, W.[a,b], Alaydrus, M.[a]

[a]Department of Electrical Engineering, Universitas Mercu Buana Jakarta, Jalan Menteng Raya No. 29, Jakarta Pusat, Indonesia
[b]Department of Mechatronics Engineering, Kulliyyah of Engineering, International Islamic University Malaysia, Jalan Gombak, Kuala Lumpur, 53100, Malaysia

Abstract

View references (16)

Androgenic hair pattern is one of the newest soft biometric trait that can be used to identify criminals when their faces are covered in the evidences of criminal investigation. In real-life situation, sometimes the available evidence is limited thus creating problems for authorities to identify criminal based on the limited data. This research developed the recognition system to identify individuals based on their androgenic hair pattern in a limited data situation in such a way that the limited images were expanded by the augmentation process. There were 50 images studied and expanded into 2.000 images from the augmentation process of rotating, reflecting, adjusting color and intensity. Furthermore, the effect of human skin color extraction was investigated by employing HSV and YCbCr color spaces. The scale-space hierarchy was built among the images with Gaussian function and produced 70% recognition precision that was around more than 2 times higher compared to system of recognition with only limited data. © 2019 Universitas Ahmad Dahlan.

SciVal Topic Prominence

Topic: Biometrics | Image retrieval | tattoo image

Prominence percentile: 56.176

Author keywords

Androgenic hair pattern | Augmented data | Biometric identification | Hierarchical Gaussian scale-space | Limited training

ISSN: 16936930
DOI: 10.12928/TELKOMNIKA.v17i1.11713
Source Type: Journal
Document Type: Article
Original language: English
Publisher: Universitas Ahmad Dahlan

References (16)

View in search results format ›

All Export Print E-mail Save to PDF Create bibliography

Metrics

0 Citations in Scopus

0 Field-Weighted Citation Impact

PlumX Metrics

Usage, Captures, Mentions, Social Media and Citations beyond Scopus.

Cited by 0 documents

Inform me when this document is cited in Scopus:

Set citation alert ›

Set citation feed ›

Related documents

Biometric Identification with Limited Data Set
Lionnie, R. , Attamimi, S. , Sediono, W.
(2019) 2018 Electrical Power, Electronics, Communications, Controls and Informatics Seminar, EECCIS 2018

A comparison of human skin color detection for biometrie identification
Lionnie, R. , Alaydrus, M.
(2018) 2017 International Conference on Broadband Communication, Wireless Sensors and Powering, BCWSP 2017

Hierarchical Gaussian scale-space on androgenic hair pattern recognition
Lionnie, R. , Alaydrus, M.
(2017) Telkomnika (Telecommunication Computing Electronics and Control)

View all related documents based on references

1 Tariq, A., Akram, M.U.
Personal identification using ear recognition
(2012) *Telkomnika*, 10 (2), pp. 321-326. Cited 9 times.
View at Publisher

2 Jain, A.K.
(2008) *Handbook of Biometrics*. Cited 927 times.
Springer

3 Su, H., Kong, A.W.K.
A study on low resolution androgenic hair patterns for criminal and victim identification
(2014) *IEEE Transactions on Information Forensics and Security*, 9 (4), art. no. 6740829, pp. 666-680. Cited 22 times.
doi: 10.1109/TIFS.2014.2306591
View at Publisher

4 Palastanga, N., Soames, R.
(2012) *Anatomy and Human Movement: Structure and Function*, p. 541. Cited 226 times.
Sixth Edition. Elsevier Churchill Livingstone

5 Chan, F.K.S., Kong, A.W.-K.
Using Hair Follicles with Leg Geometry to Align Androgenic Hair Patterns
(2015) *Proceedings - 2015 European Intelligence and Security Informatics Conference, EISIC 2015*, art. no. 7379736, pp. 137-140. Cited 7 times.
ISBN: 978-147998657-6
doi: 10.1109/EISIC.2015.17
View at Publisher

6 Lionnie, R., Alaydrus, M.
An Analysis of Haar Wavelet Transform for Androgenic Hair Pattern Recognition
(2016) *Proceedings of The First International Conference on Informatics and Computing*
Lombok

7 Lionnie, R., Alaydrus, M.
Biometric identification system based on Principal Component Analysis
(2016) *Proceedings - 2016 12th International Conference on Mathematics, Statistics, and Their Applications, ICMSA 2016: In Conjunction with the 6th Annual International Conference of Syiah Kuala University*, art. no. 7954309, pp. 59-63. Cited 7 times.
ISBN: 978-150903385-0
doi: 10.1109/ICMSA.2016.7954309
View at Publisher