

Note on Fingerprint Subject Ageing

The data suited for investigation of subject-ageing related effects for fingerprint recognition applications was collected for 49 different subjects in April 2009 and April 2013, resulting in a time span of 4 years between the old and new images for the subjects. The images have furthermore been acquired with various sensors, including optical and capacitive off-the-shelf fingerprint scanners. In 2009 one sensor was used. In 2013 3 different sensory types have been considered, resulting in the possibility of performing cross-sensor related investigations as well. The database is divided into the two time spans, 2009 and 2013, and each time span contains folders corresponding to the single sensors and subjects, which furthermore contain the fingerprint-images for the specific subjects. The specific files have each a unique filename, which has been generated with the following file naming rules:

2009:

\$root path\$/Y/sensorName/A/IIII/RRRR_IIIF_XXXX_Z_S.bmp

Y = Year: 2009

A = Number of Acquisition Session

I = User ID

R = Sensor ID

F = FingerID (1: Left Index Finger, 2: Left Middle Finger, 6: Right Index Finger, 7: Right Middle

Finger)

X = Image Index

Z = Session

2013:

\$root path\$/Y/sensorName/A/IIII/RRRR_IIIF_XXXX_Z_S.bmp

Y = Year: 2013

A = Number of Acquisition Session

I = User ID

R = Sensor ID

F = FingerID (1: Right Index Finger, 2: Right Middle Finger, 6: Left Index Finger, 7: Left Middle

Finger)

X = Image Index

Z = Session

The User ID is unique for each subjects and consistent over the time interval and different sensors, hence images with the same User ID are from the same subject both in 2009 and 2013 and for all sensors.

Overview of the database:

2009:

- uru4000: 1 acquisition session, 49 subjects, 20 images per subject, left and right index and middle finger for each subject
(in total 4 different fingers and 5 imprints for each finger), in total 980 images are available

2013:

- T2: 1 acquisition session, 49 subjects, 20 images per subject, left and right index and middle finger for each subject
(in total 4 different fingers and 5 imprints for each finger), in total 980 images are available

- uru4000: 2 acquisition session, 49 subjects, 20 images per subject, left and right index and middle finger for each subject
(in total 4 different fingers and 5 imprints for each finger), in total 1960 images are available

- uru4500: 2 acquisition session, 49 subjects, 20 images per subject, left and right index and middle finger for each subject
(in total 4 different fingers and 5 imprints for each finger), in total 1960 images are available

Publications:

[1] Simon Kirchgasser and Andreas Uhl, "Biometric Menagerie in Time-Span separated Fingerprint Data", Proceedings of the International Conference of the Biometrics Special Interest Group (BIOSIG'16), 2016

[2] Simon Kirchgasser and Andreas Uhl, "Template Ageing and Quality Analysis in Time-Span separated Fingerprint Data", Proceedings of the IEEE International Conference on Identity, Security and Behavior Analysis (ISBA '17), 2017

[3] Simon Kirchgasser and Andreas Uhl, "Template Ageing in non-minutiae Fingerprint Recognition", Proceedings of the International Workshop on Biometrics and Forensics (IWBF '17), 2017

[4] Simon Kirchgasser and Andreas Uhl, "Fingerprint Template Ageing vs. Template Changes Revisited", Proceedings of the International Conference of the Biometrics Special Interest Group (BIOSIG'17), 2017