A: Datasheet

Algorithm: anke_002

Developer: Anke Investments

Submission Date: 2019_06_27

Template size: 2056 bytes

Template time (2.5 percentile): 622 msec

Template time (median): 624 msec

Template time (97.5 percentile): 703 msec

Investigation:

Frontal mugshot ranking 49 (out of 265) -- FNIR(1600000, 0, 1) = 0.0028 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 51 (out of 227) -- FNIR(1600000, 0, 1) = 0.0160 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 50 (out of 196) -- FNIR(1600000, 0, 1) = 0.5221 vs. lowest 0.0591 from sensetime_005

Immigration visa-border ranking 34 (out of 148) -- FNIR(1600000, 0, 1) = 0.0047 vs. lowest 0.0013 from visionlabs_010

Immigration visa-kiosk ranking 44 (out of 145) -- FNIR(1600000, 0, 1) = 0.1192 vs. lowest 0.0568 from hr_000

Identification:

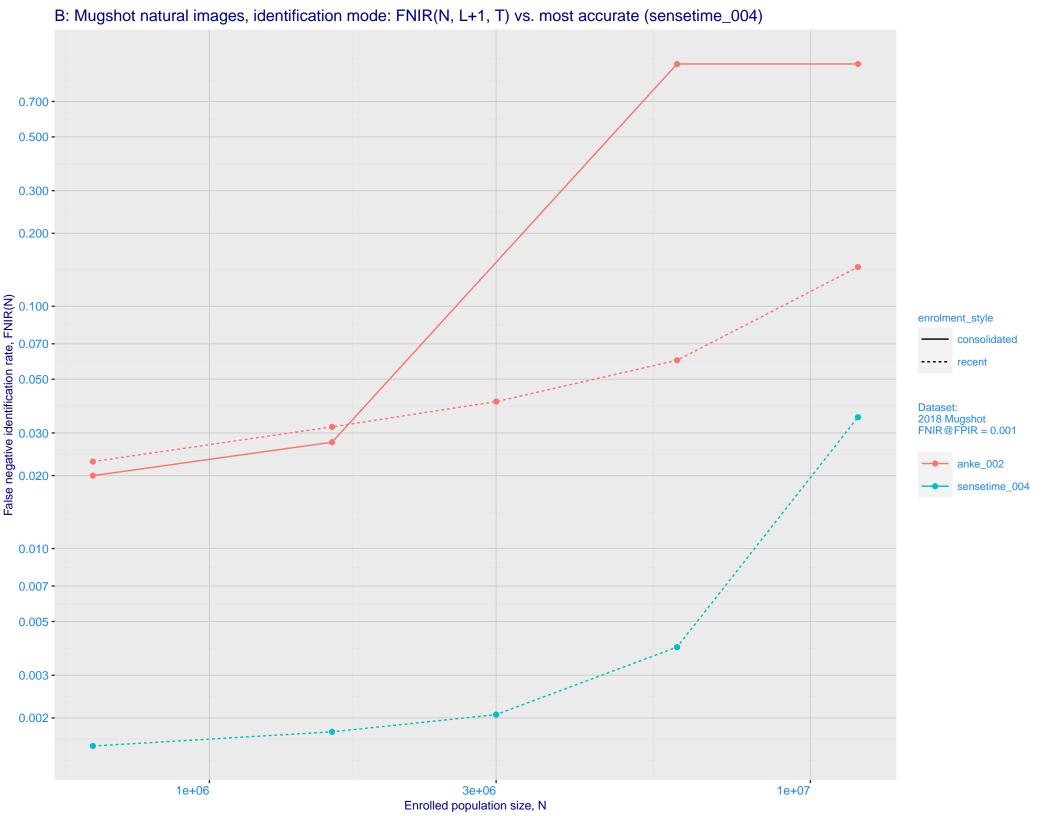
Frontal mugshot ranking 54 (out of 265) -- FNIR(1600000, T, L+1) = 0.0318, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 46 (out of 225) -- FNIR(1600000, T, L+1) = 0.0790, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

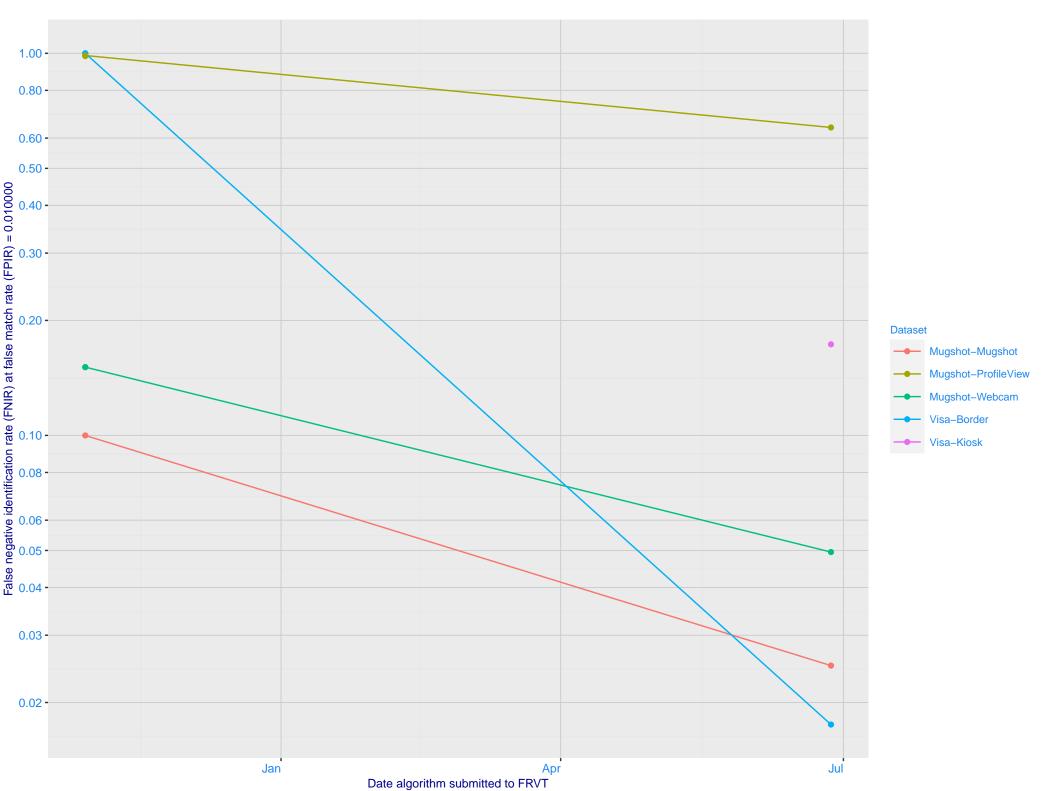
Mugshot profile ranking 37 (out of 195) -- FNIR(1600000, T, L+1) = 0.9476, FPIR=0.001000 vs. lowest 0.1331 from hr_000

Immigration visa-border ranking 35 (out of 146) -- FNIR(1600000, T, L+1) = 0.0345, FPIR=0.001000 vs. lowest 0.0049 from hr_000

Immigration visa-kiosk ranking 28 (out of 141) — FNIR(1600000, T, L+1) = 0.2450, FPIR=0.001000 vs. lowest 0.0996 from hr_000

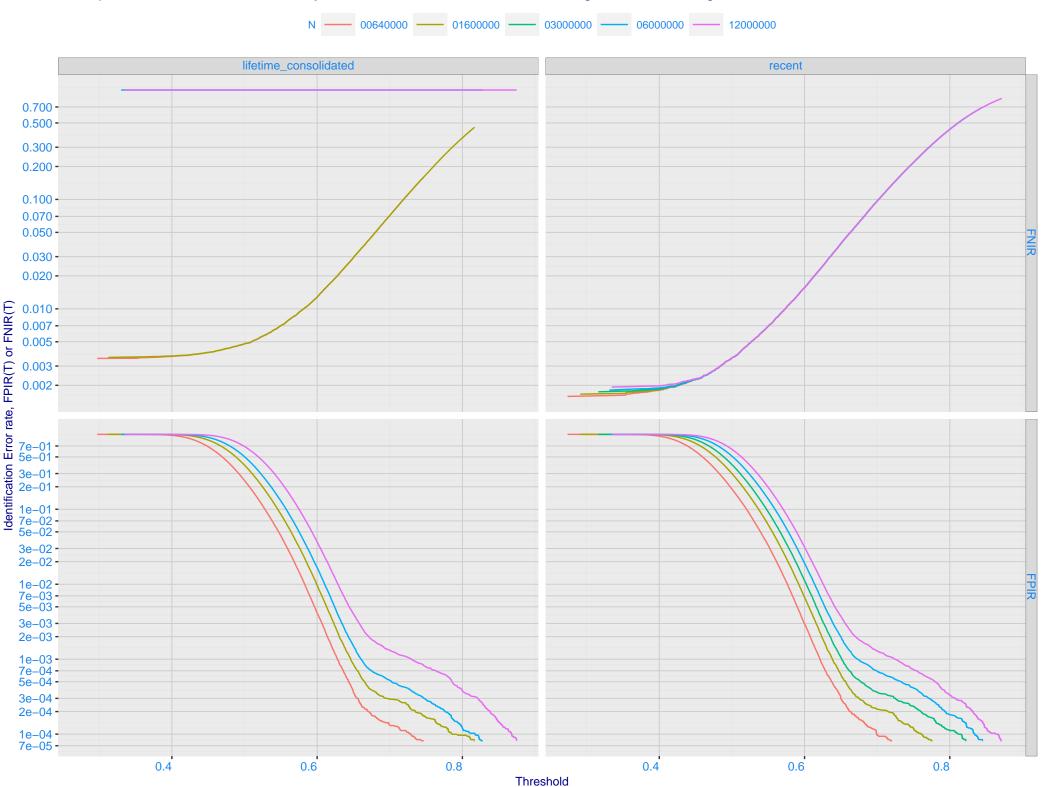


C: Evolution of accuracy for ANKE algorithms on three datasets 2018 – present

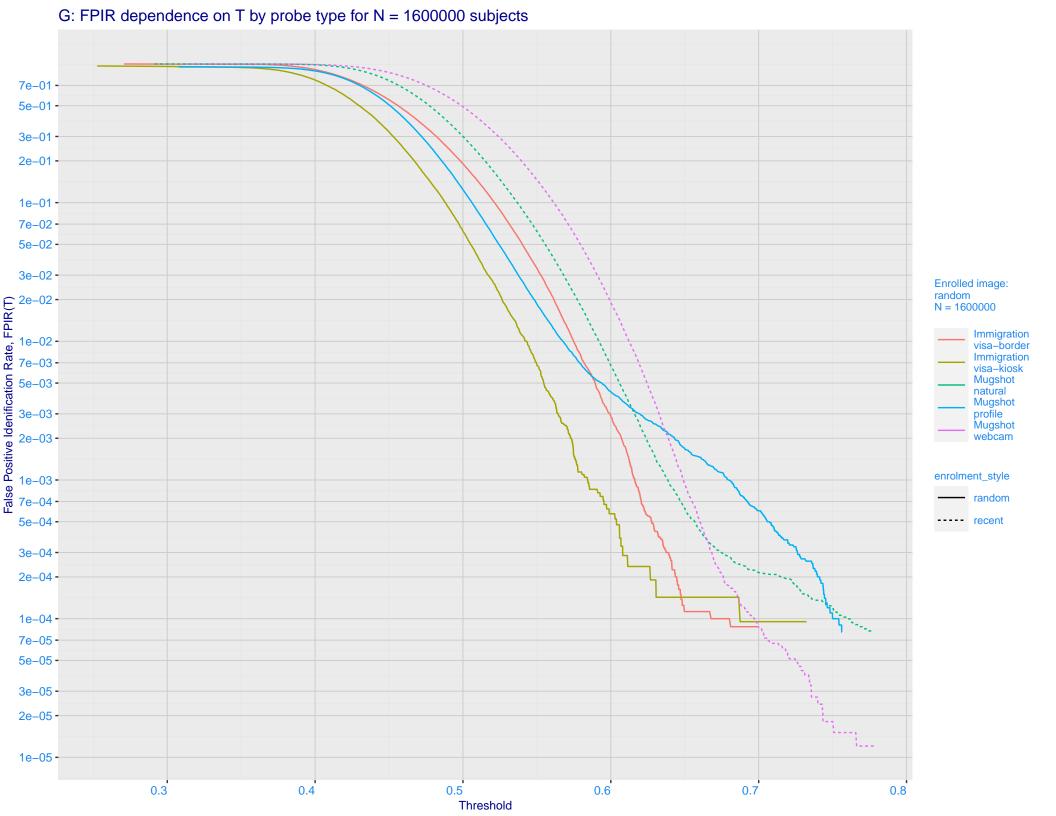


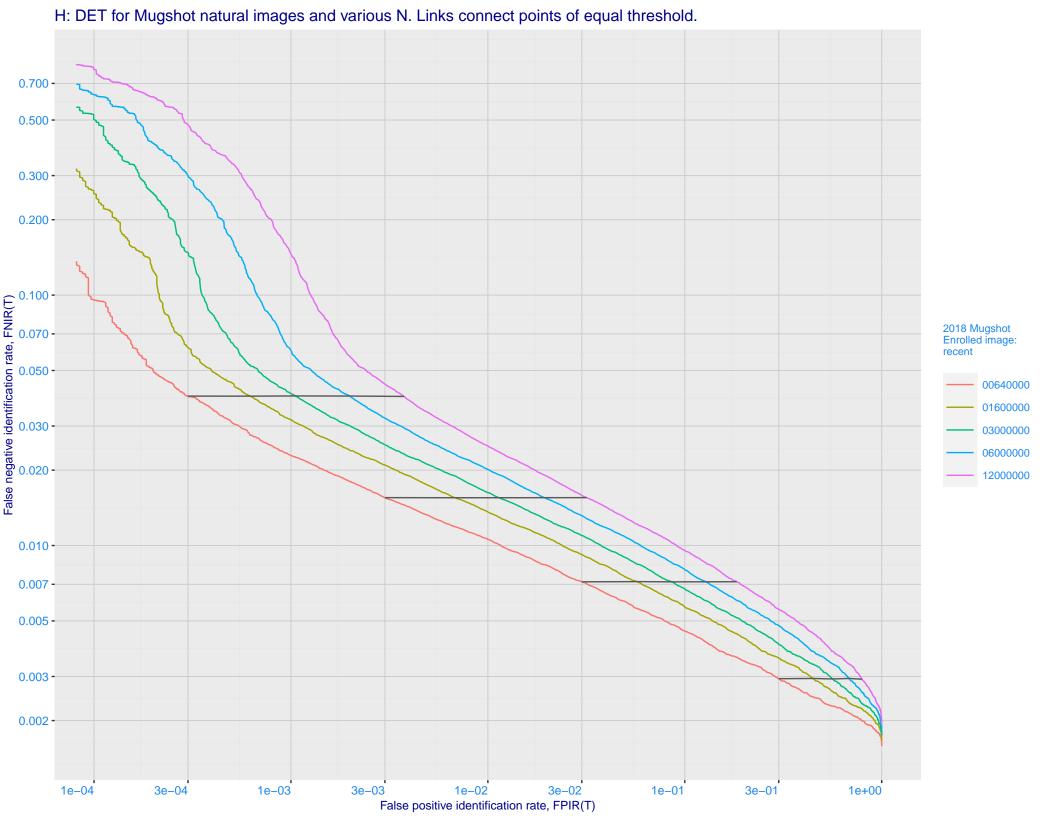
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration Immigration** Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.0001 - 0.001 - 0.500 - 0.500 - 0.200 - 0.100 - 0 enrolment_style consolidated-ONE-MATE random-ONE-MATE recent-ONE-MATE unconsolidated-ALL-MATES unconsolidated-ANY-MATE 0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -

E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -7e-02 -5e-02 -3e-02 -3e-02 -1e-02 -**Enrolled images:** recent N = 1600000 Mugshot natural Mugshot webcam 7e-03 -5e-03 -3e-03 -2e-03 -1e-03 -7e-04 -5e-04 -3e-04 -2e-04 -1e-04 -7e-05 -5e-05 -3e-05 -2e-05 -1e-05 -1e-05 3e-05 1e-04 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 False Positive Idenification Rate, FPIR(T)

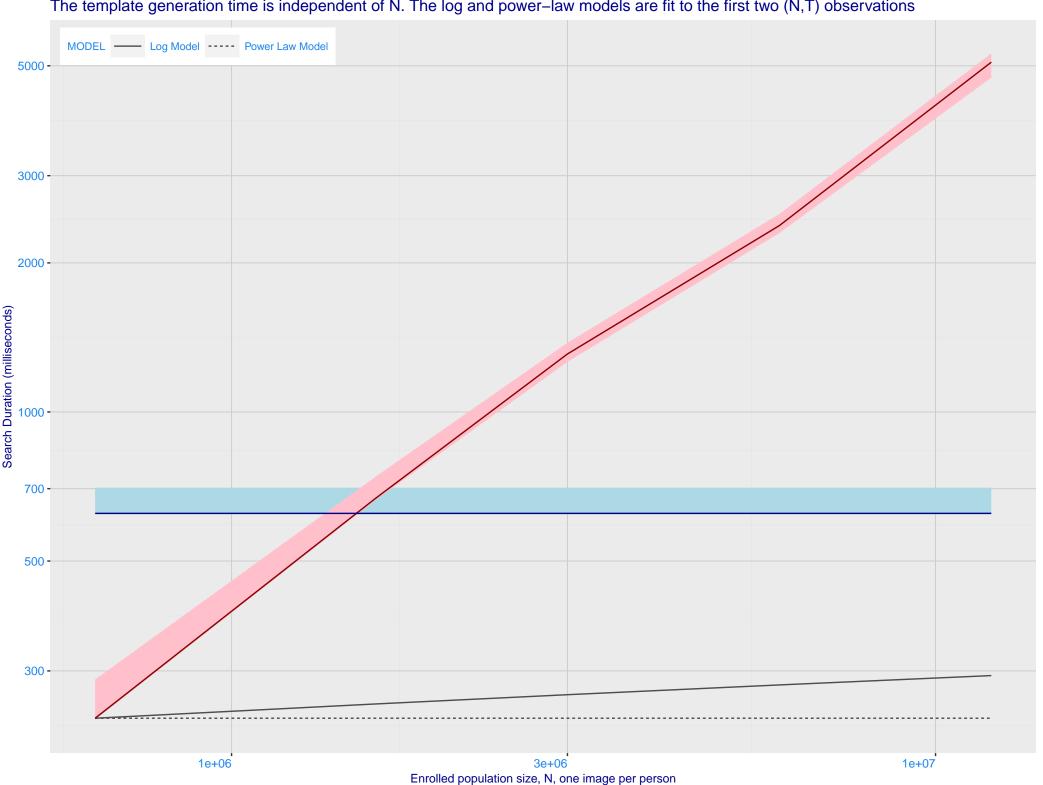




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 - 0.003 - 0.002 - 0.001 - 0.001 - 0.000 - 0.300 - 0.200 enrolment_style consolidated ---- random --- recent Mugshot Mugshot webcam natural FNIR@Rank = 1 --- anke_002 sensetime_005 0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 0.003 -0.002 -0.001 -1e+06 3e+06 1e+07 1e+06 3e+06 1e+07 Enrolled population size, N

J: Investigational mode: FNIR(1600000, R, 0) by probe type anke_002 sensetime_005 0.100 -0.070 -0.050 -0.030 enrolment_style Ealse negative identification rate, FNIR(N) 0.000 - 0. lifetime_consolidated ---- random --- recent FNIR(R) N = 1600000 Immigration visa-border Immigration visa-kiosk Mugshot natural Mugshot webcam 0.003 -0.002 -0.001 -10 30 3 10 30 Rank, R

Template duration; search duration vs. N. The blue and pink ribbon covers 95 percent of observed measurements. The template generation time is independent of N. The log and power–law models are fit to the first two (N,T) observations



M: Identification FNIR(N, T, L+1) and Investigational FNIR(N, 0, R) under ageing



