A: Datasheet

Algorithm: scanovate_000

Developer: Scanovate Ltd

Submission Date: 2020_01_15

Template size: 2048 bytes

Template time (2.5 percentile): 669 msec

Template time (median): 705 msec

Template time (97.5 percentile): 778 msec

Investigation:

Frontal mugshot ranking 137 (out of 329) -- FNIR(1600000, 0, 1) = 0.0050 vs. lowest 0.0009 from sensetime_006

Mugshot webcam ranking 201 (out of 291) -- FNIR(1600000, 0, 1) = 0.0446 vs. lowest 0.0057 from sensetime_006

Mugshot profile ranking 110 (out of 260) — FNIR(1600000, 0, 1) = 0.5605 vs. lowest 0.0550 from sensetime_006

Immigration visa-border ranking 151 (out of 218) -- FNIR(1600000, 0, 1) = 0.0346 vs. lowest 0.0009 from sensetime_006

Immigration visa-kiosk ranking 146 (out of 215) -- FNIR(1600000, 0, 1) = 0.2106 vs. lowest 0.0487 from cubox_000

Identification:

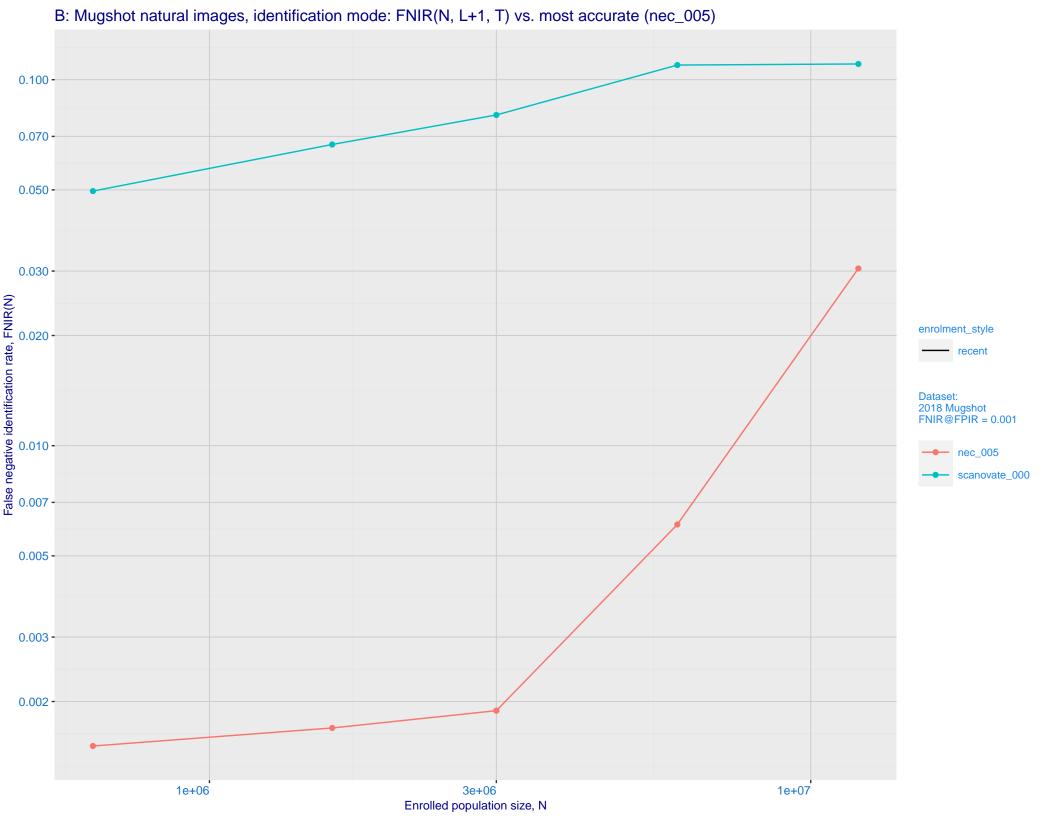
Frontal mugshot ranking 163 (out of 329) -- FNIR(1600000, T, L+1) = 0.0665, FPIR=0.001000 vs. lowest 0.0017 from nec_005

Mugshot webcam ranking 200 (out of 289) -- FNIR(1600000, T, L+1) = 0.2403, FPIR=0.001000 vs. lowest 0.0120 from nec_005

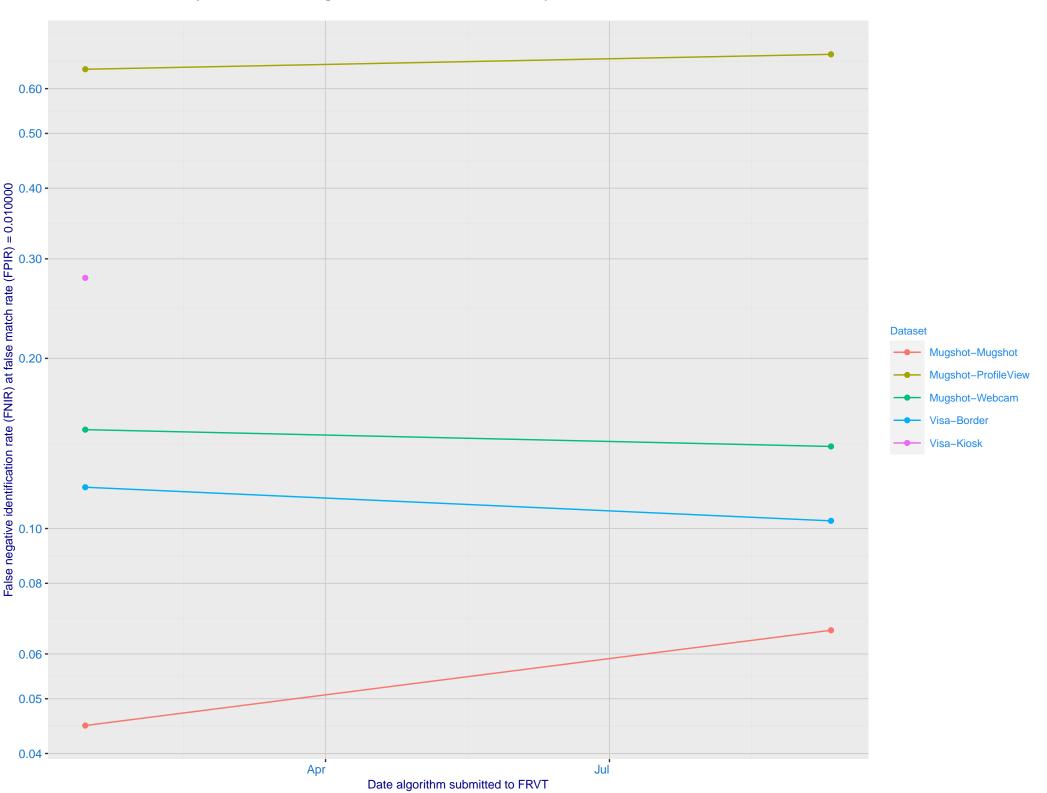
Mugshot profile ranking 51 (out of 259) — FNIR(1600000, T, L+1) = 0.8928, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000

Immigration visa-border ranking 150 (out of 217) -- FNIR(1600000, T, L+1) = 0.2152, FPIR=0.001000 vs. lowest 0.0032 from paravision_009

Immigration visa-kiosk ranking 95 (out of 212) -- FNIR(1600000, T, L+1) = 0.4044, FPIR=0.001000 vs. lowest 0.0728 from paravision_009



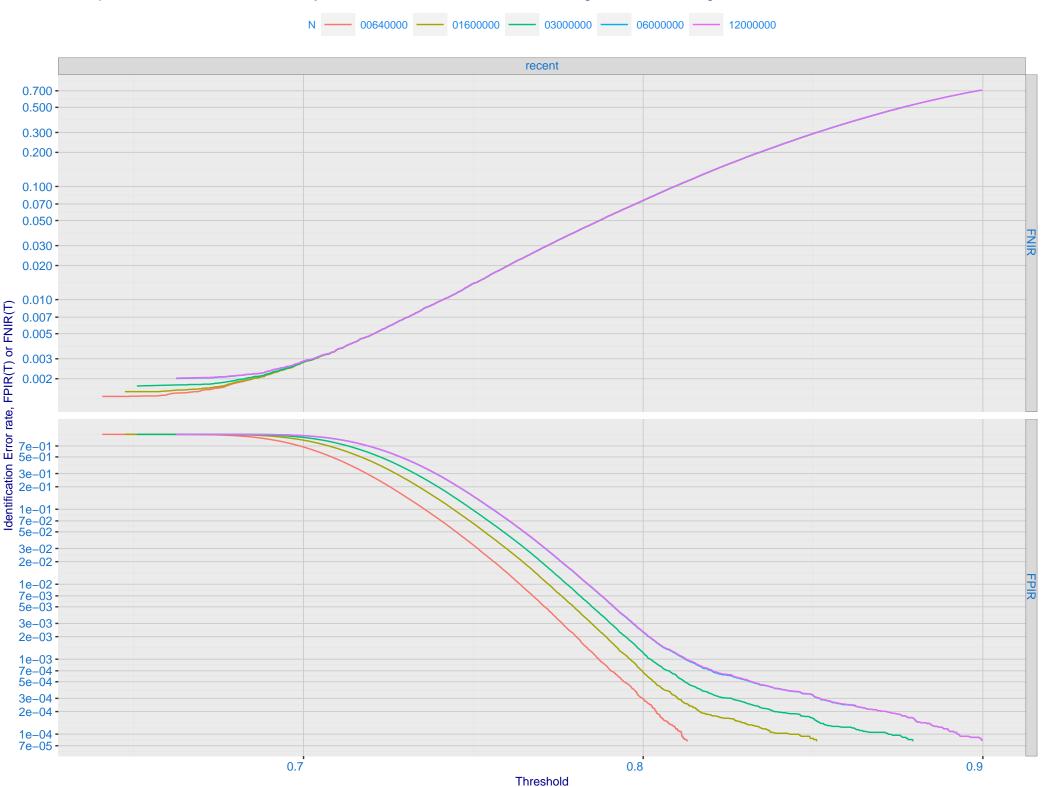
C: Evolution of accuracy for SCANOVATE algorithms on three datasets 2018 – present



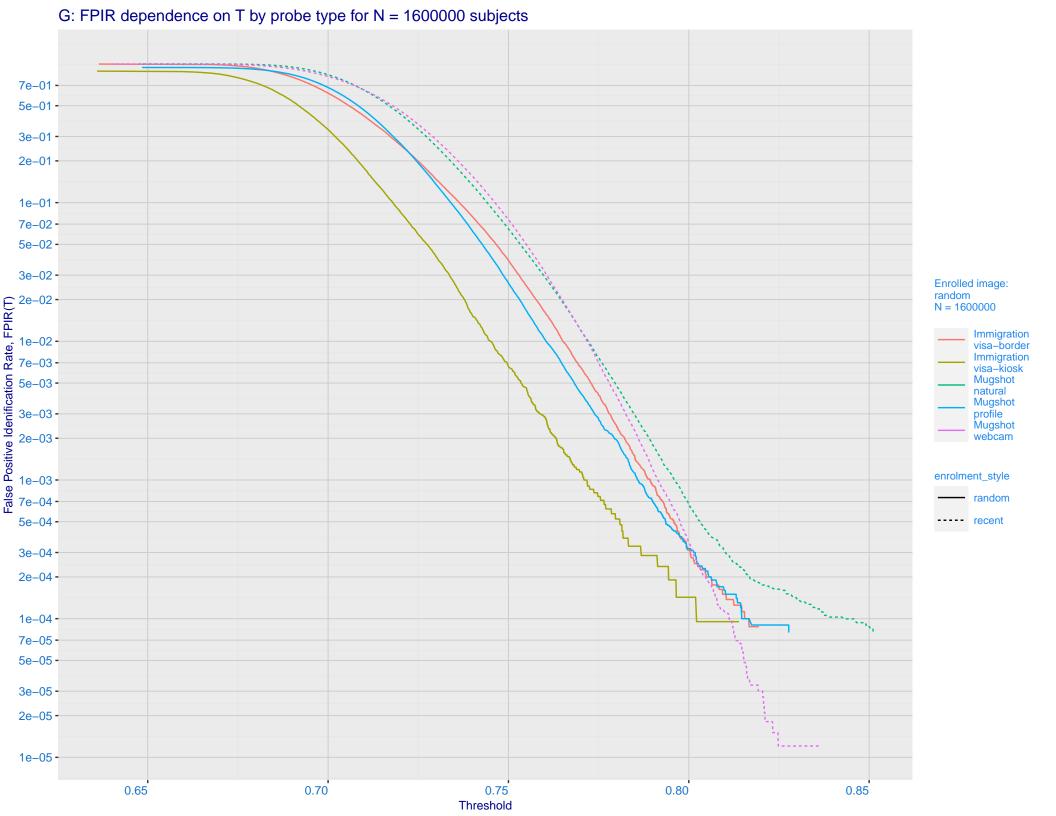
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration Immigration** Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 - 0.005 - 0.003 - 0.002 - 0.001 - 0.500 - 0.500 - 0.200 enrolment_style random-ONE-MATE recent-ONE-MATE unconsolidated-ALL-MATES unconsolidated-ANY-MATE 0.100 -0.070 scanovate 000 0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -

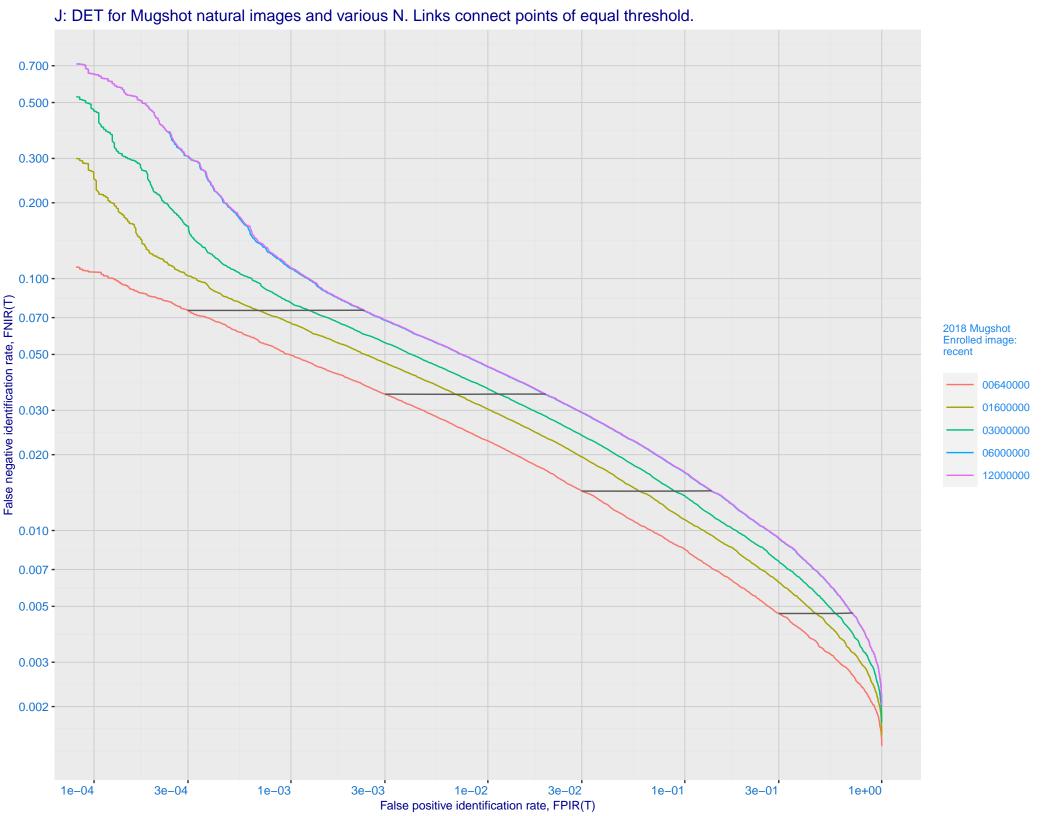
False positive identification rate, FPIR(T)

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

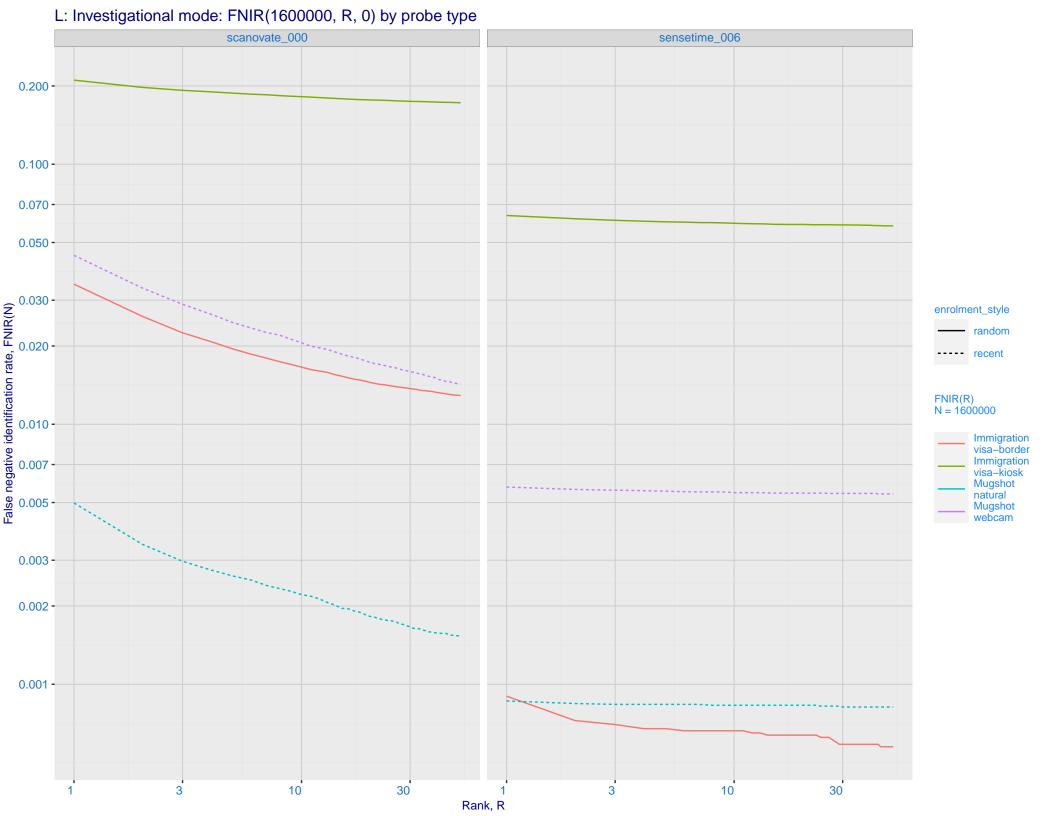


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -7e-02 -5e-02 -3e-02 -3e-02 -1e-02 -**Enrolled images:** recent N = 1600000 Mugshot natural Mugshot webcam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

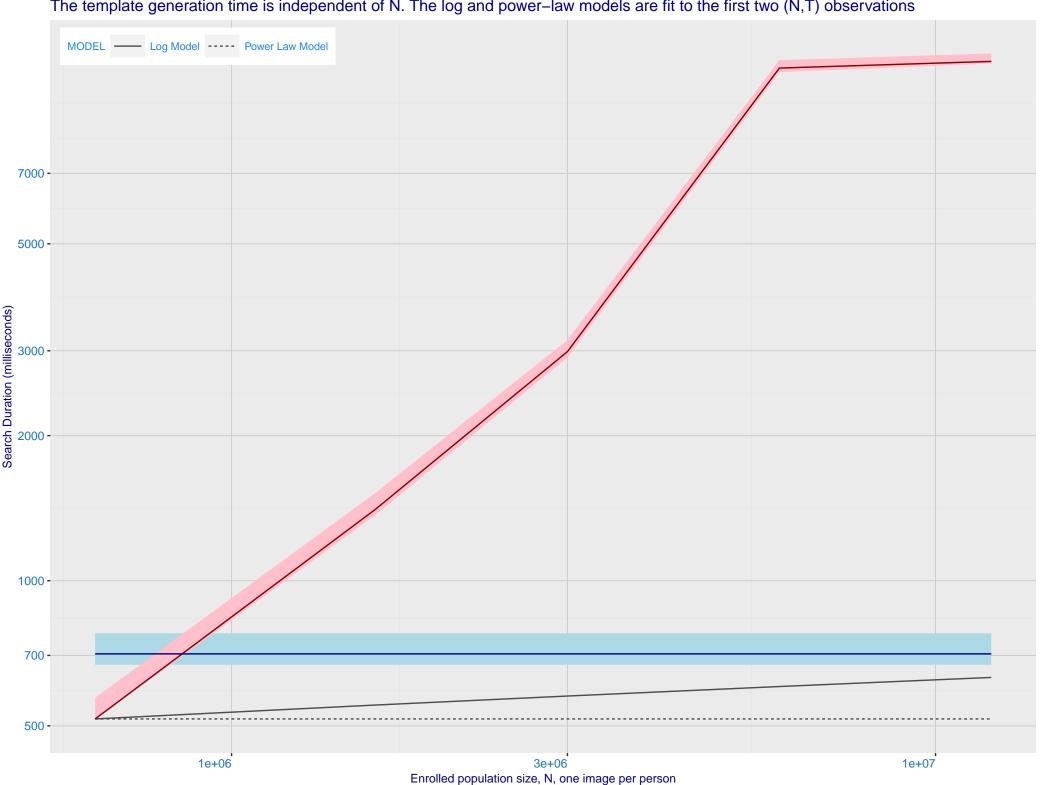




K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_006) Immigration **Immigration** visa-border visa-kiosk 0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Ealse negative identification rate, FNIR(N) 0.003 - 0.001 - 0.200 - 0.100 - 0.070 - 0. enrolment_style - random ---- recent Mugshot webcam Mugshot natural FNIR@Rank = 1 - scanovate_000 sensetime_006 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



M: 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



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



