A: Datasheet

Algorithm: scanovate_001

Developer: Scanovate Ltd

Submission Date: 2020_09_10

Template size: 2048 bytes

Template time (2.5 percentile): 646 msec

Template time (median): 675 msec

Template time (97.5 percentile): 703 msec

Investigation:

Frontal mugshot ranking 81 (out of 259) -- FNIR(1600000, 0, 1) = 0.0053 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 128 (out of 221) -- FNIR(1600000, 0, 1) = 0.0401 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 58 (out of 190) -- FNIR(1600000, 0, 1) = 0.5849 vs. lowest 0.0591 from sensetime_005

Immigration visa-border ranking 76 (out of 142) -- FNIR(1600000, 0, 1) = 0.0310 vs. lowest 0.0014 from visionlabs_009

Immigration visa-kiosk ranking 66 (out of 139) -- FNIR(1600000, 0, 1) = 0.1782 vs. lowest 0.0694 from cib_000

Identification:

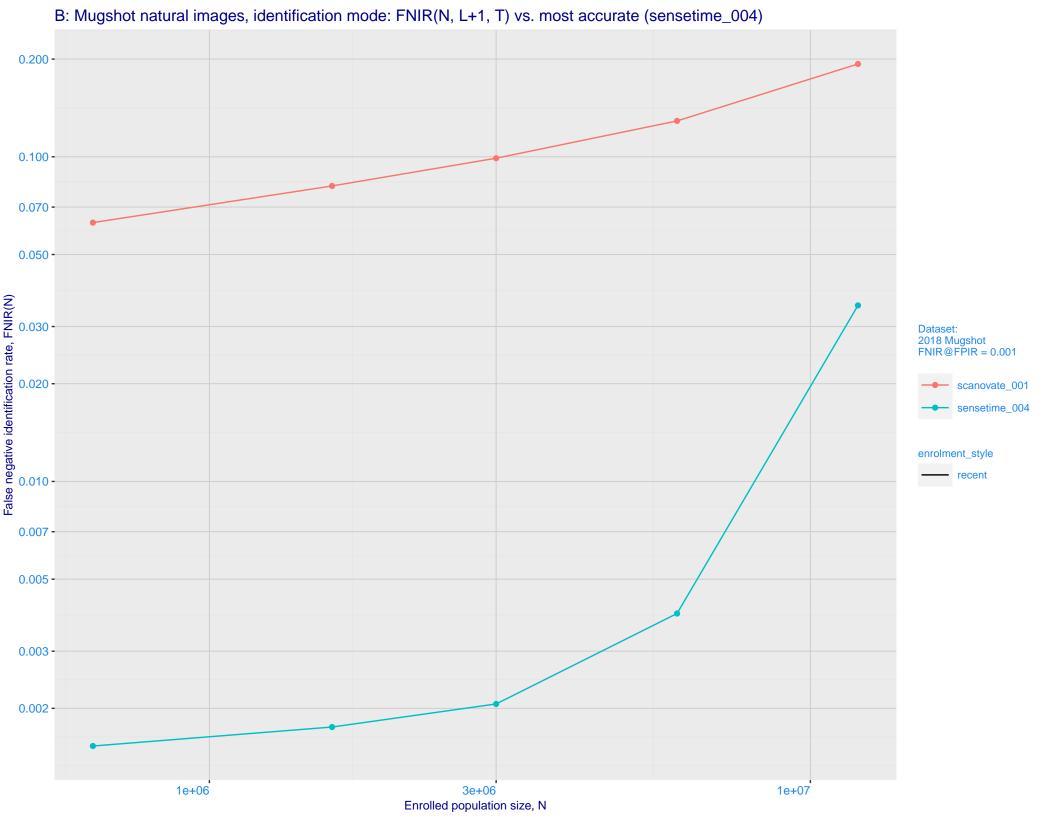
Frontal mugshot ranking 112 (out of 259) -- FNIR(1600000, T, L+1) = 0.0813, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 130 (out of 219) -- FNIR(1600000, T, L+1) = 0.2268, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

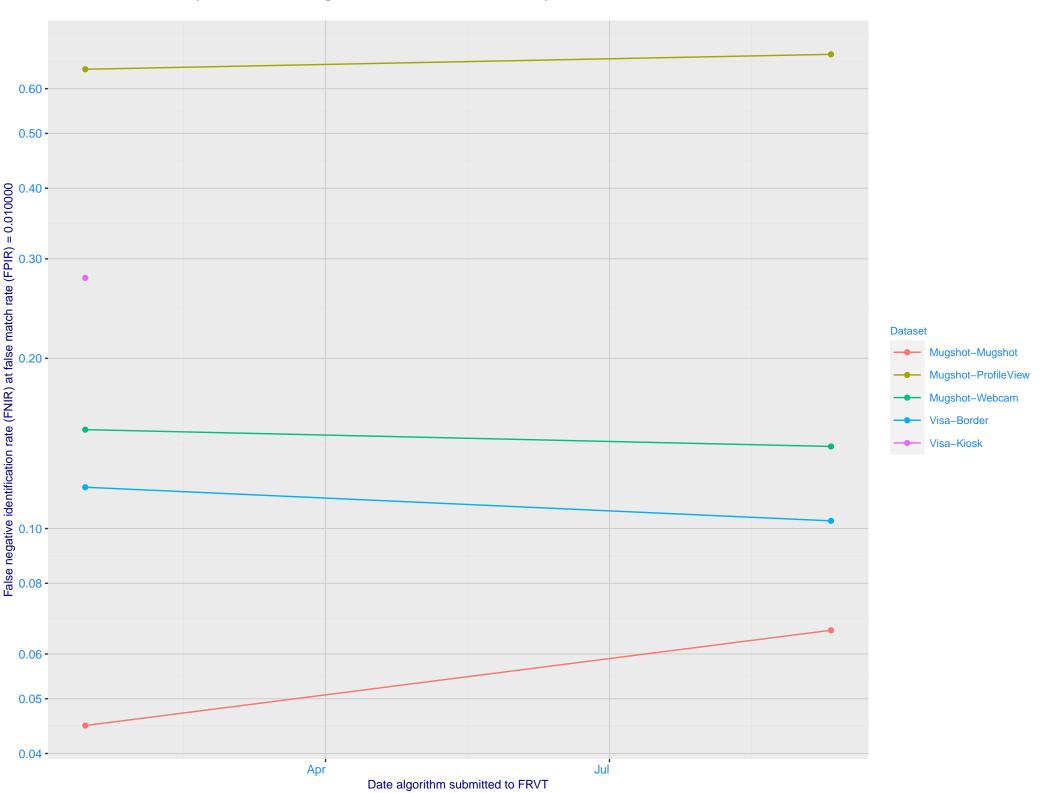
Mugshot profile ranking 31 (out of 189) -- FNIR(1600000, T, L+1) = 0.9115, FPIR=0.001000 vs. lowest 0.1733 from sensetime_005

Immigration visa-border ranking 79 (out of 139) -- FNIR(1600000, T, L+1) = 0.1924, FPIR=0.001000 vs. lowest 0.0059 from sensetime_004

Immigration visa-kiosk ranking 51 (out of 134) -- FNIR(1600000, T, L+1) = 0.4055, FPIR=0.001000 vs. lowest 0.1048 from sensetime_005



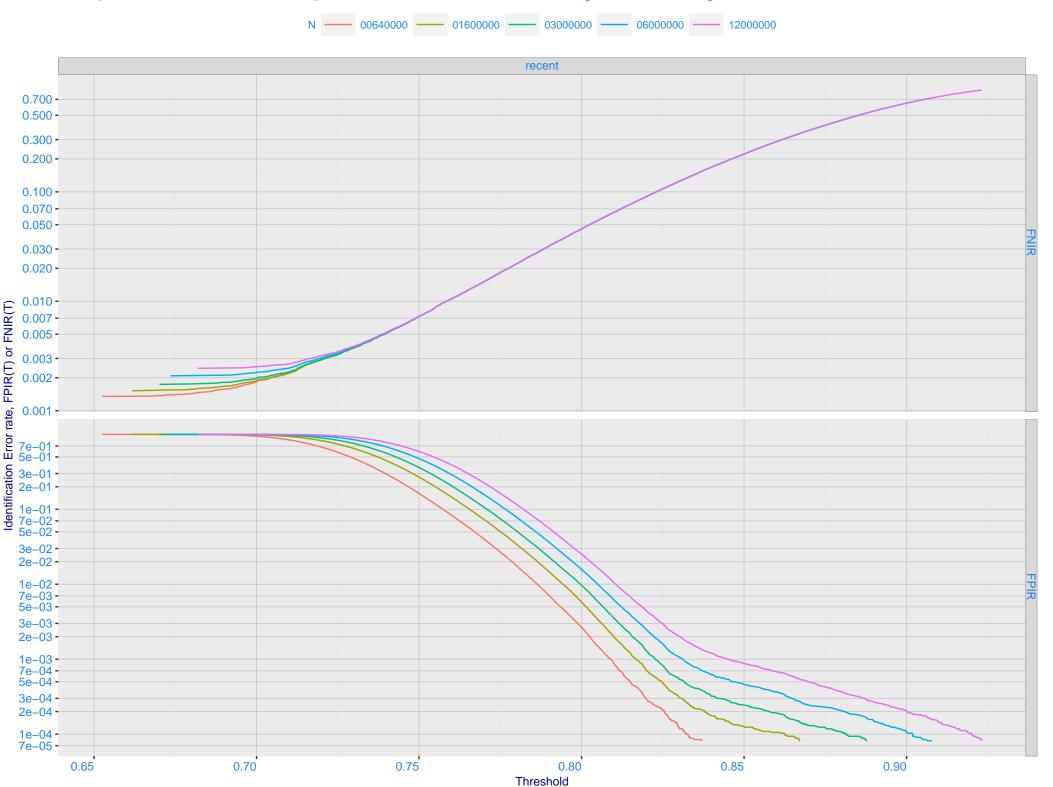
C: Evolution of accuracy for SCANOVATE algorithms on three datasets 2018 – present



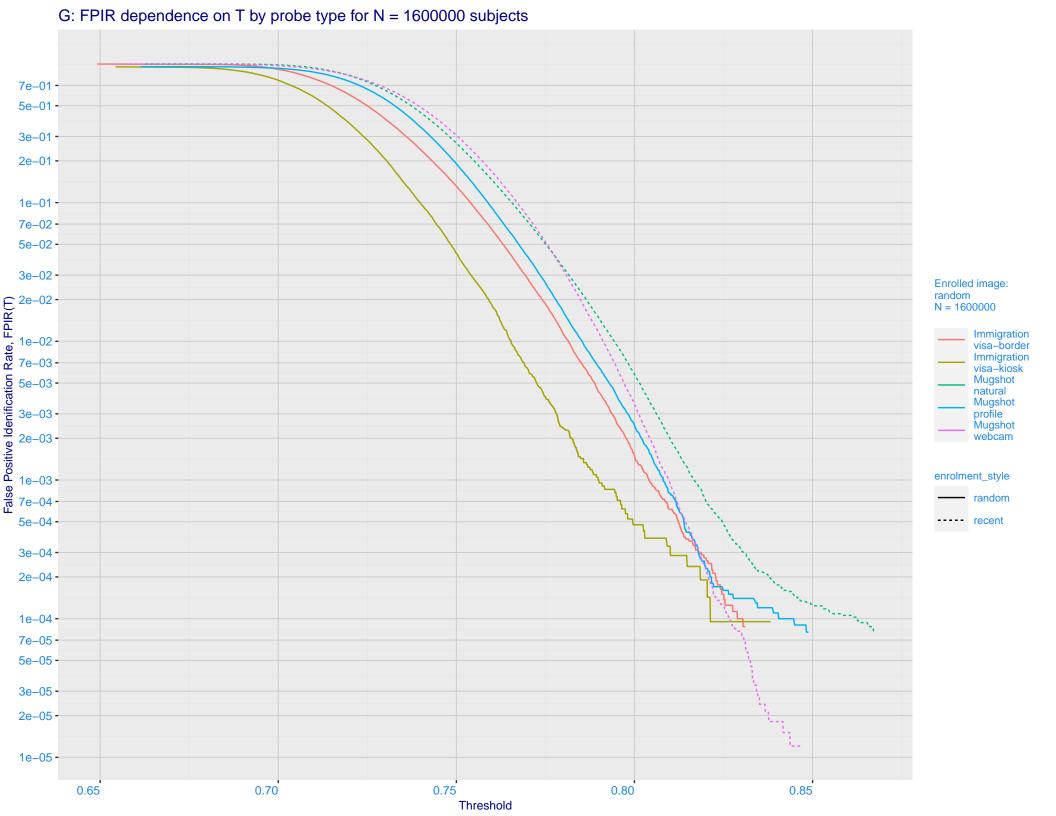
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.002 - 0.001 - 0.500 - 0.200 -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

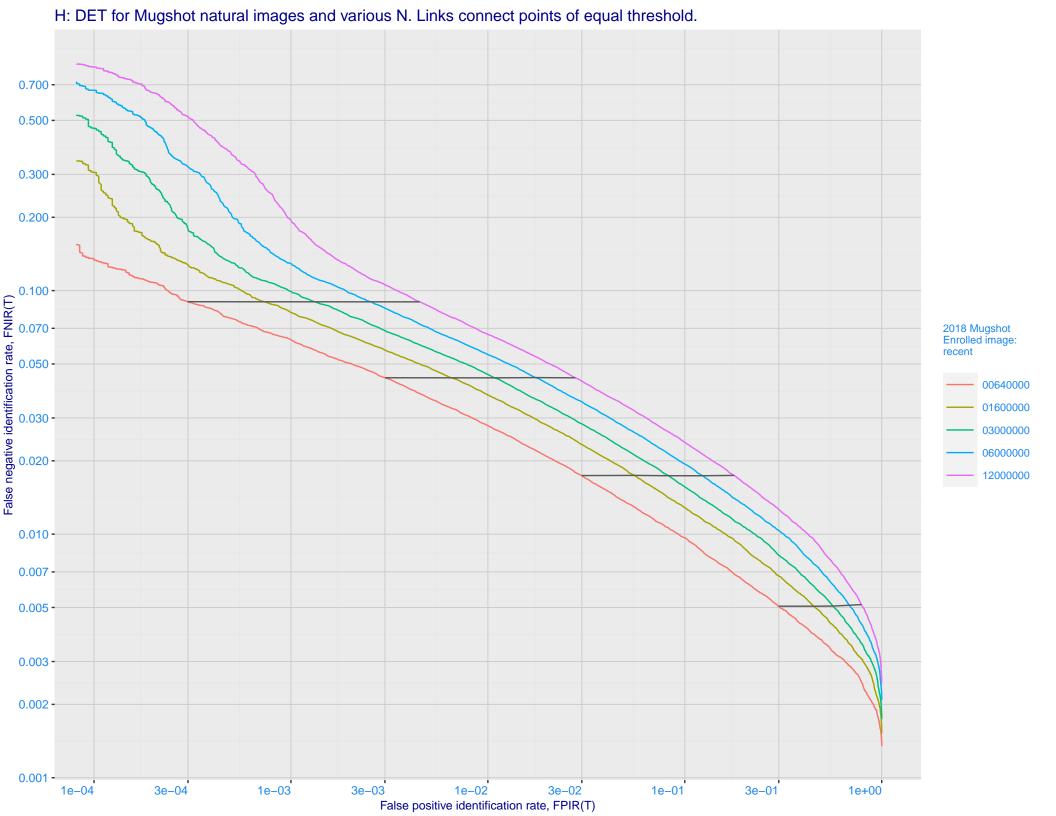
False positive identification rate, FPIR(T)

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

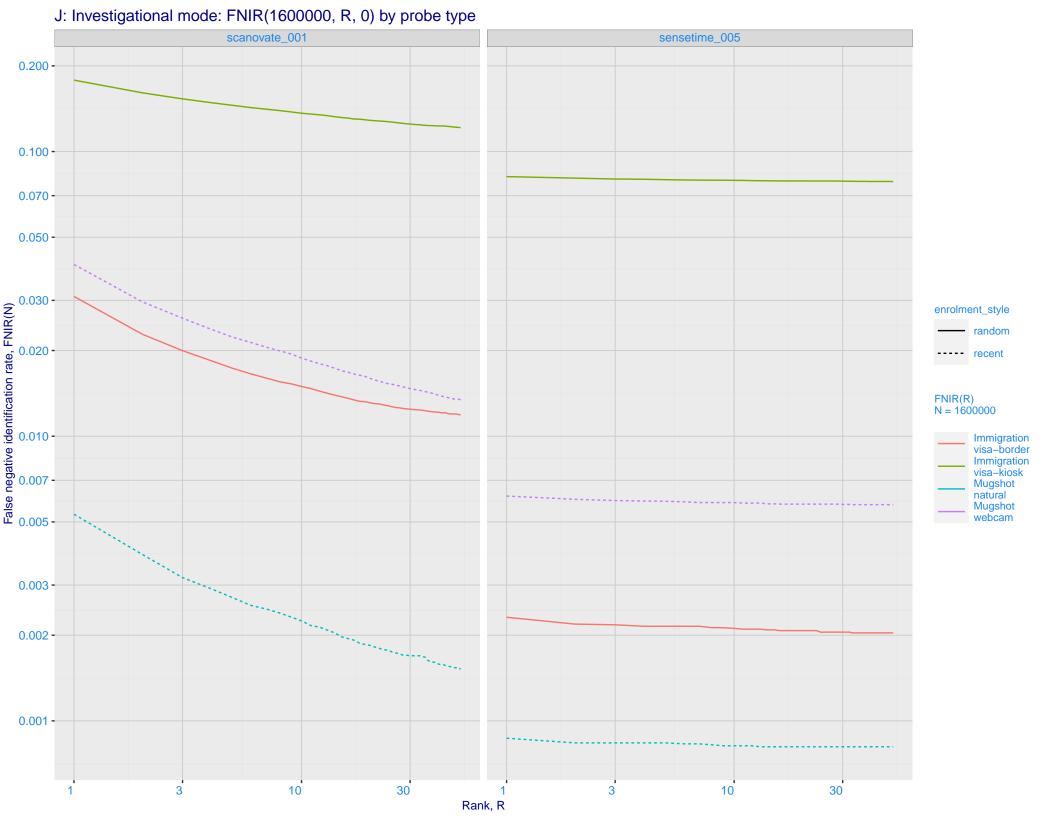


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -7e-02 -5e-02 -3e-02 -3e-02 -1e-02 -**Enrolled images:** recent N = 1600000 Mugshot natural Mugshot webcam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

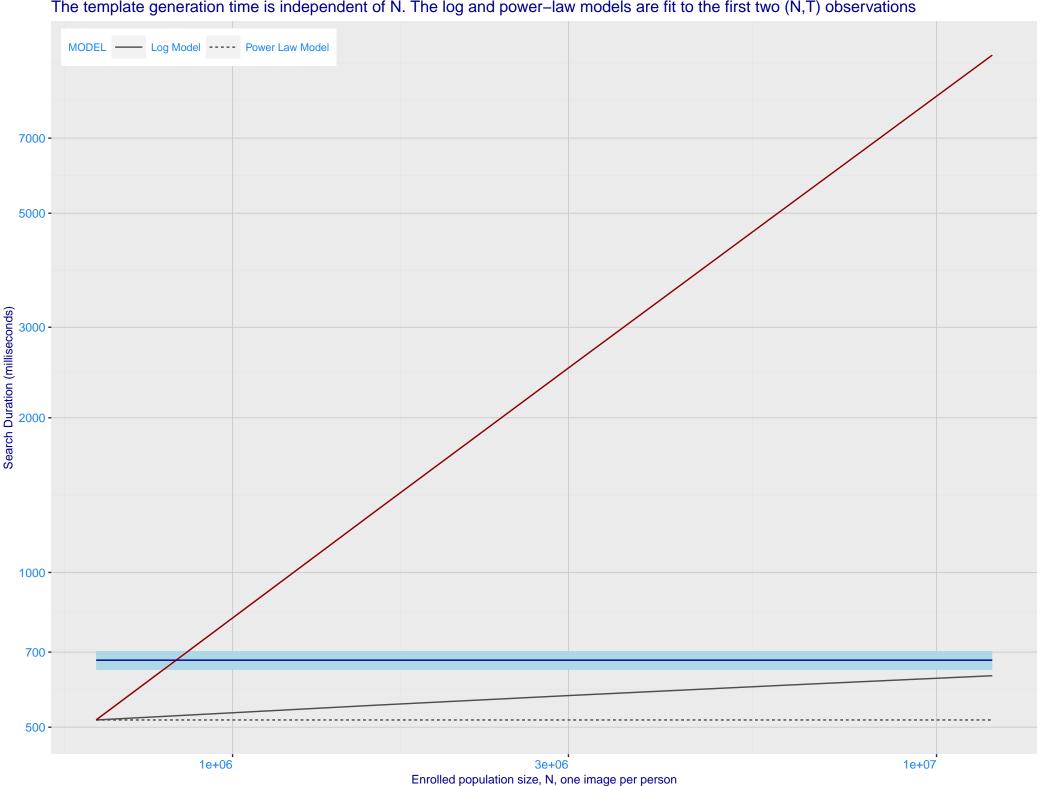




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Ealse negative identification rate, FNIR(N) 0.002 - 0.001 - 0.200 - 0.100 - 0.070 - 0.050 - 0. enrolment_style - random ---- recent Mugshot webcam Mugshot natural FNIR@Rank = 1 scanovate_001 - sensetime_005 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



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

