A: Datasheet

Algorithm: innovatrics_005

Developer: Innovatrics

Submission Date: 2019_09_30

Template size: 538 bytes

Template time (2.5 percentile): 821 msec

Template time (median): 828 msec

Template time (97.5 percentile): 928 msec

Investigation:

Frontal mugshot ranking 42 (out of 265) — FNIR(1600000, 0, 1) = 0.0024 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 39 (out of 227) -- FNIR(1600000, 0, 1) = 0.0141 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 39 (out of 196) -- FNIR(1600000, 0, 1) = 0.4074 vs. lowest 0.0591 from sensetime_005

Immigration visa-border ranking 33 (out of 148) -- FNIR(1600000, 0, 1) = 0.0047 vs. lowest 0.0013 from visionlabs_010

Immigration visa-kiosk ranking 35 (out of 145) -- FNIR(1600000, 0, 1) = 0.1087 vs. lowest 0.0568 from hr_000

Identification:

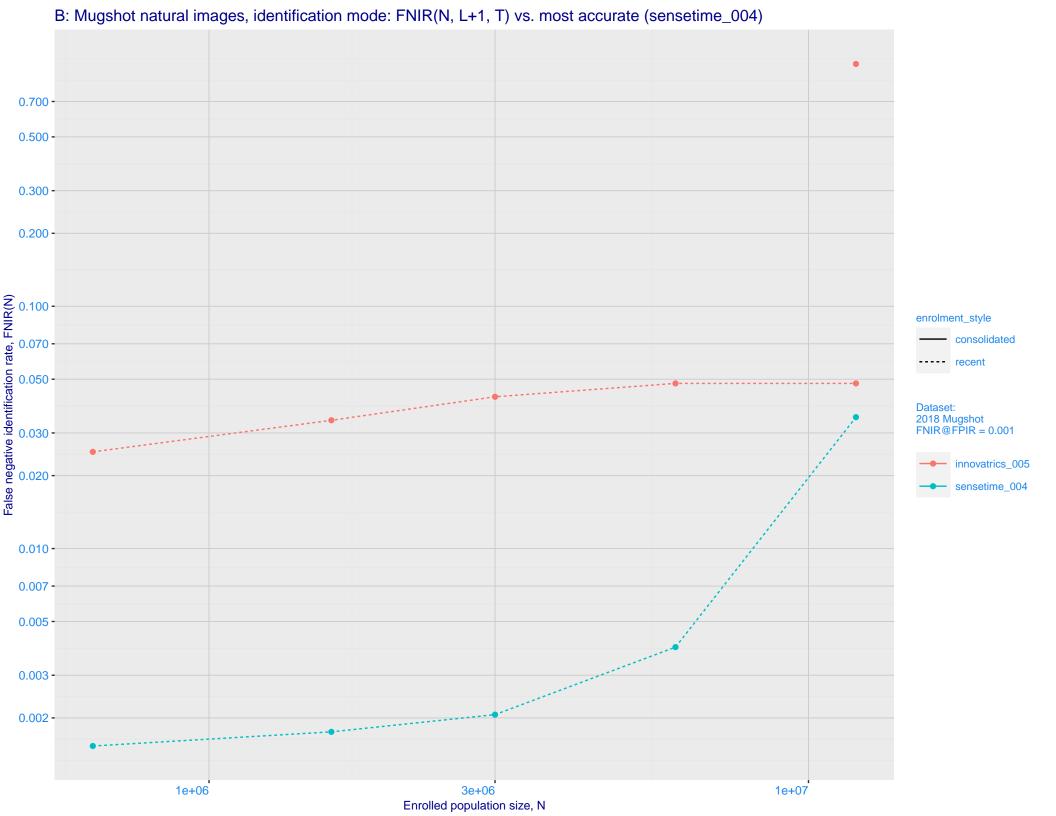
Frontal mugshot ranking 56 (out of 265) -- FNIR(1600000, T, L+1) = 0.0338, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 51 (out of 225) -- FNIR(1600000, T, L+1) = 0.0888, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

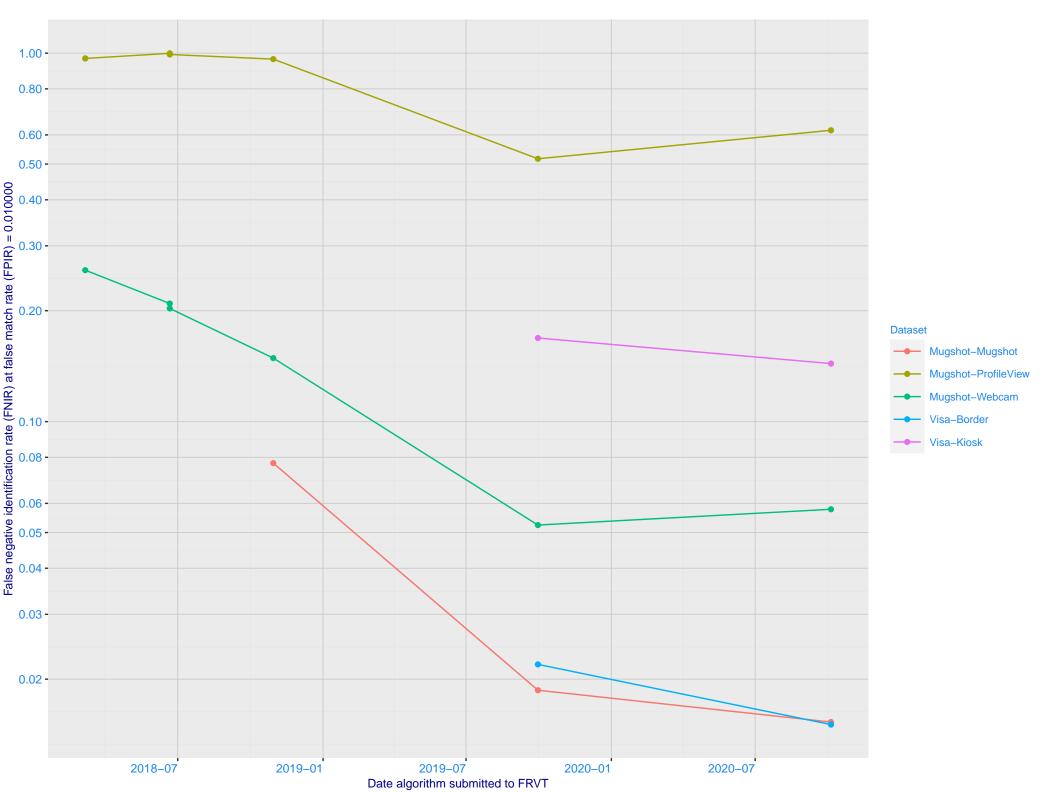
Mugshot profile ranking 26 (out of 195) -- FNIR(1600000, T, L+1) = 0.8465, FPIR=0.001000 vs. lowest 0.1331 from hr_000

Immigration visa-border ranking 41 (out of 146) -- FNIR(1600000, T, L+1) = 0.0465, FPIR=0.001000 vs. lowest 0.0049 from hr_000

Immigration visa-kiosk ranking 30 (out of 141) — FNIR(1600000, T, L+1) = 0.2520, FPIR=0.001000 vs. lowest 0.0996 from hr_000

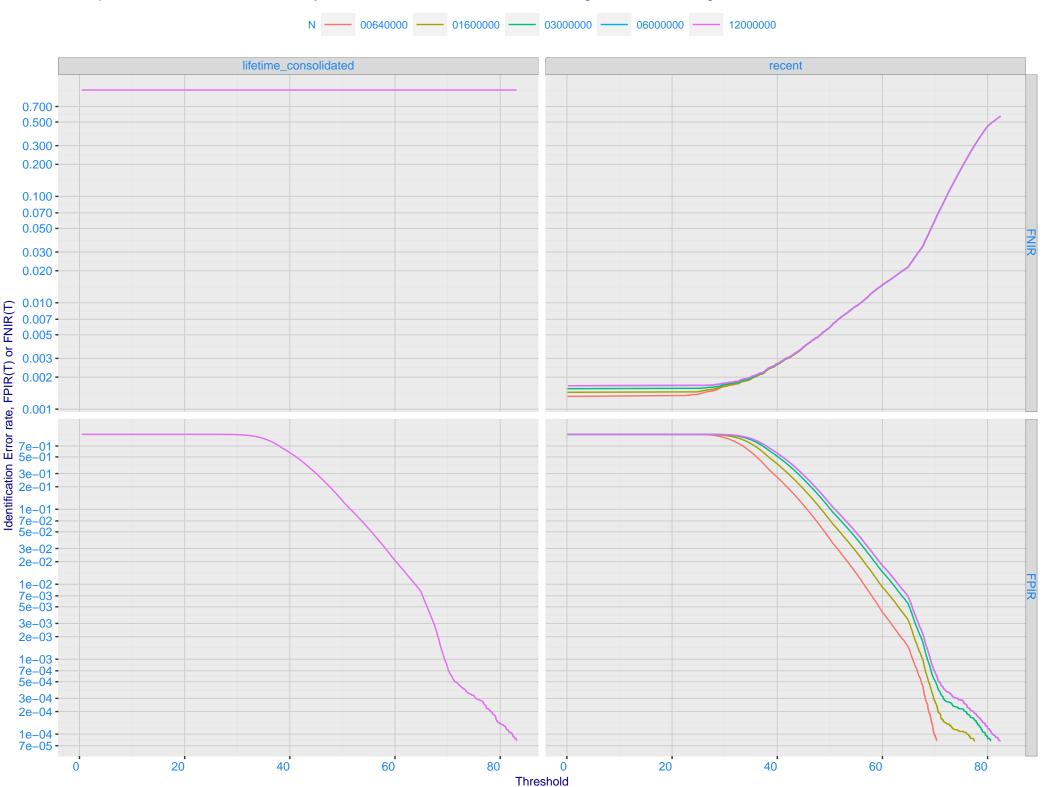


C: Evolution of accuracy for INNOVATRICS algorithms on three datasets 2018 – present

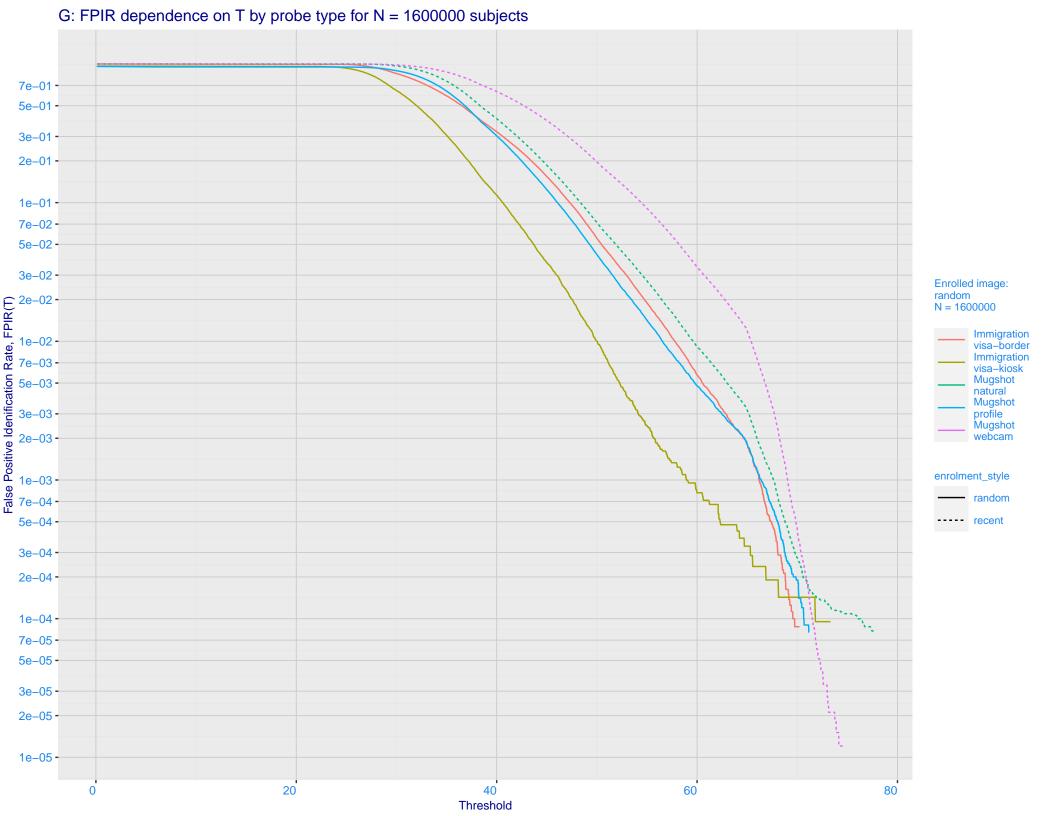


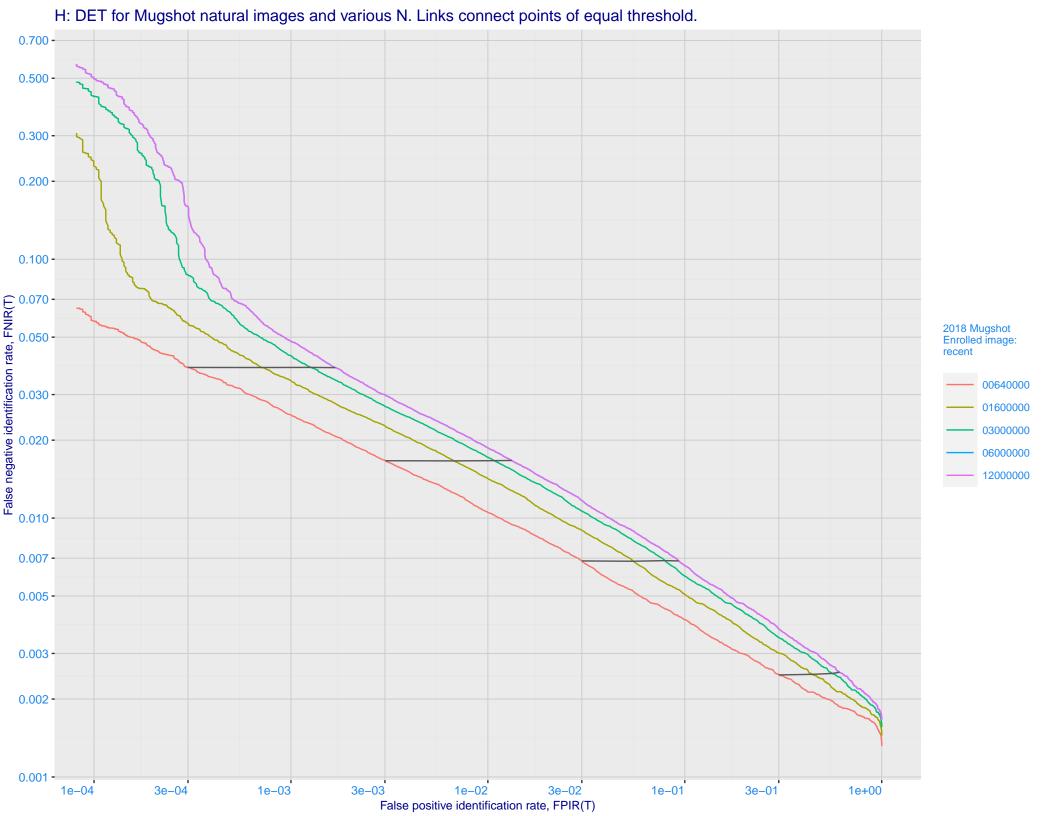
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration Immigration** Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.0001 - 0.700 - 0.500 - 0.200 - 0.100 - 0 enrolment_style 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

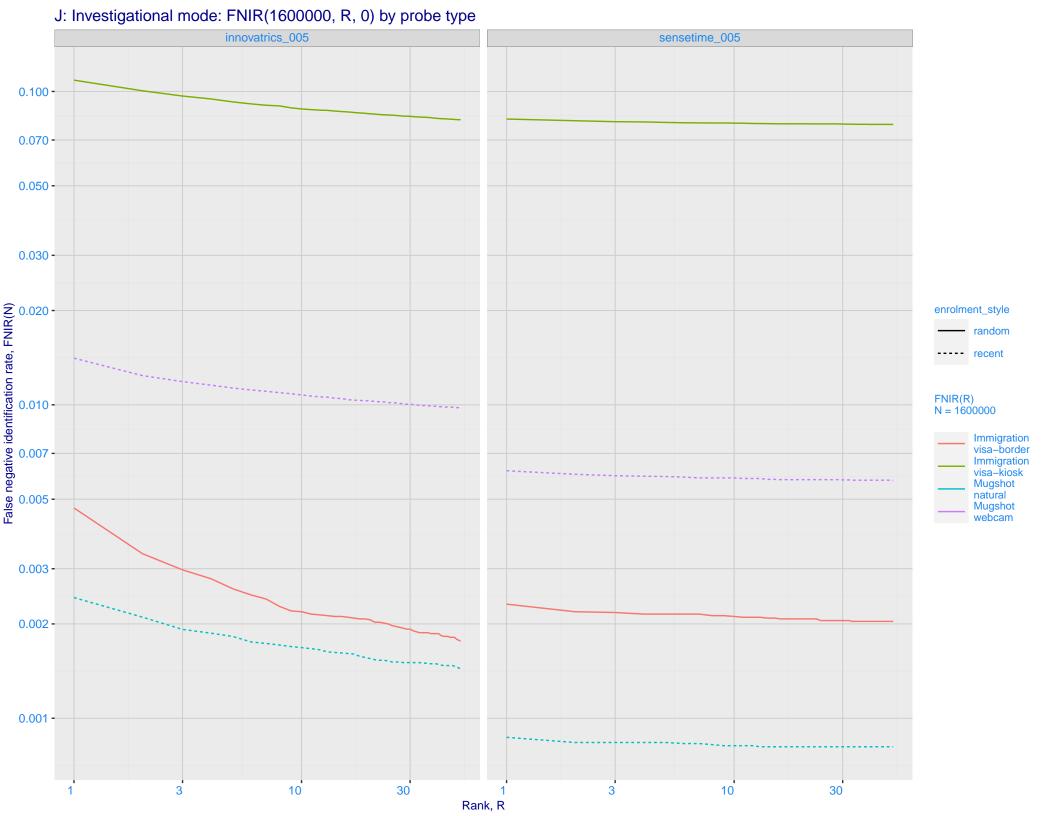


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -7e-02 -5e-02 -3e-02 -3e-02 -1e-02 -**Enrolled images:** recent N = 1600000 Mugshot natural Mugshot webcam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

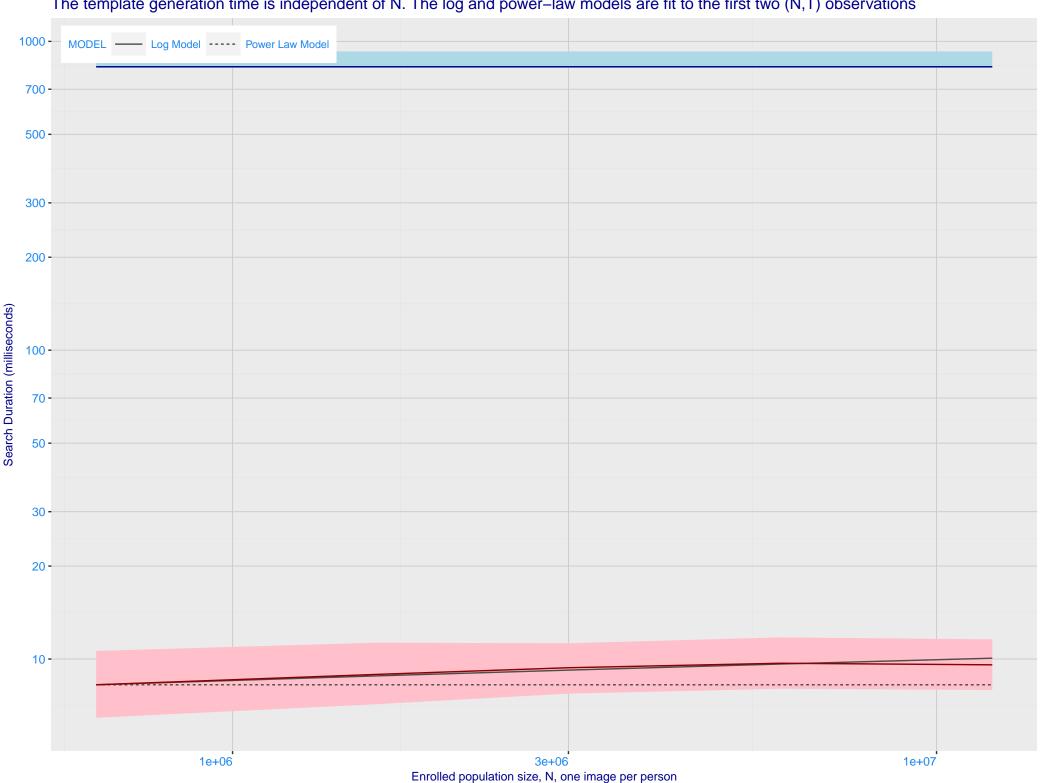




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 - 0.003 - 0.002 - 0.001 - 0.001 - 0.000 - 0.300 - 0.200 FNIR@Rank = 1 innovatrics_005 sensetime_005 Mugshot Mugshot webcam natural enrolment_style consolidated ---- random --- recent 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



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



