A: Datasheet

Algorithm: cyberlink_000

Developer: Cyberlink Corp

Submission Date: 2019_06_12

Template size: 2052 bytes

Template time (2.5 percentile): 632 msec

Template time (median): 654 msec

Template time (97.5 percentile): 974 msec

Investigation:

Frontal mugshot ranking 78 (out of 279) -- FNIR(1600000, 0, 1) = 0.0040 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 84 (out of 241) -- FNIR(1600000, 0, 1) = 0.0201 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 89 (out of 210) -- FNIR(1600000, 0, 1) = 0.7167 vs. lowest 0.0587 from xforwardai_002

Immigration visa-border ranking 61 (out of 168) -- FNIR(1600000, 0, 1) = 0.0074 vs. lowest 0.0013 from visionlabs_010

Immigration visa-kiosk ranking 63 (out of 165) -- FNIR(1600000, 0, 1) = 0.1337 vs. lowest 0.0568 from cloudwalk_hr_000

Identification:

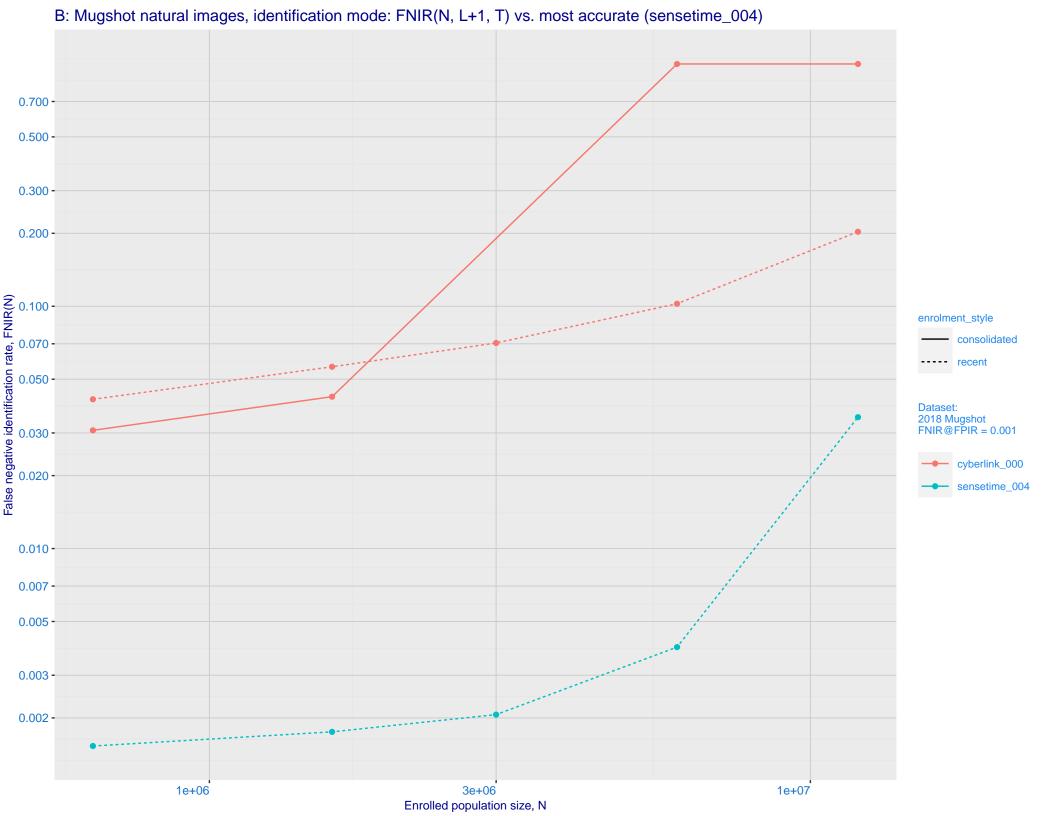
Frontal mugshot ranking 107 (out of 279) -- FNIR(1600000, T, L+1) = 0.0563, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

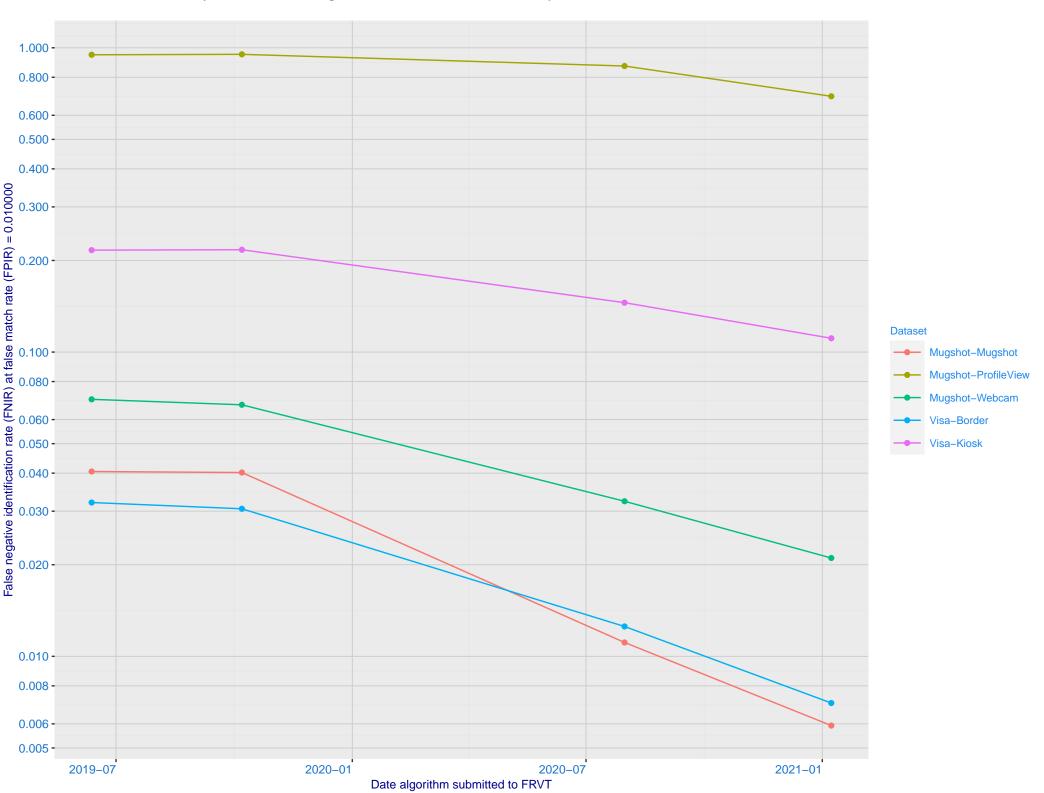
Mugshot webcam ranking 88 (out of 236) -- FNIR(1600000, T, L+1) = 0.1163, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 110 (out of 209) -- FNIR(1600000, T, L+1) = 0.9953, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000

Immigration visa-border ranking 65 (out of 167) -- FNIR(1600000, T, L+1) = 0.0625, FPIR=0.001000 vs. lowest 0.0047 from idemia_008

Immigration visa-kiosk ranking 54 (out of 162) — FNIR(1600000, T, L+1) = 0.3394, FPIR=0.001000 vs. lowest 0.0996 from cloudwalk_hr_000

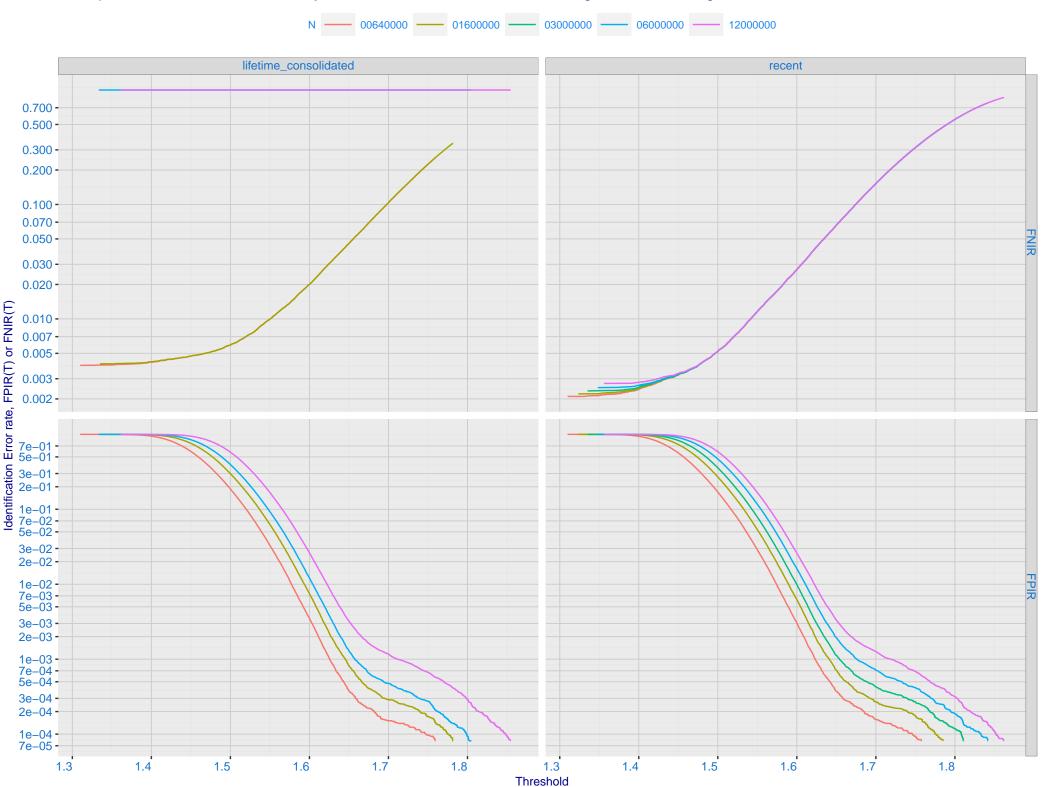




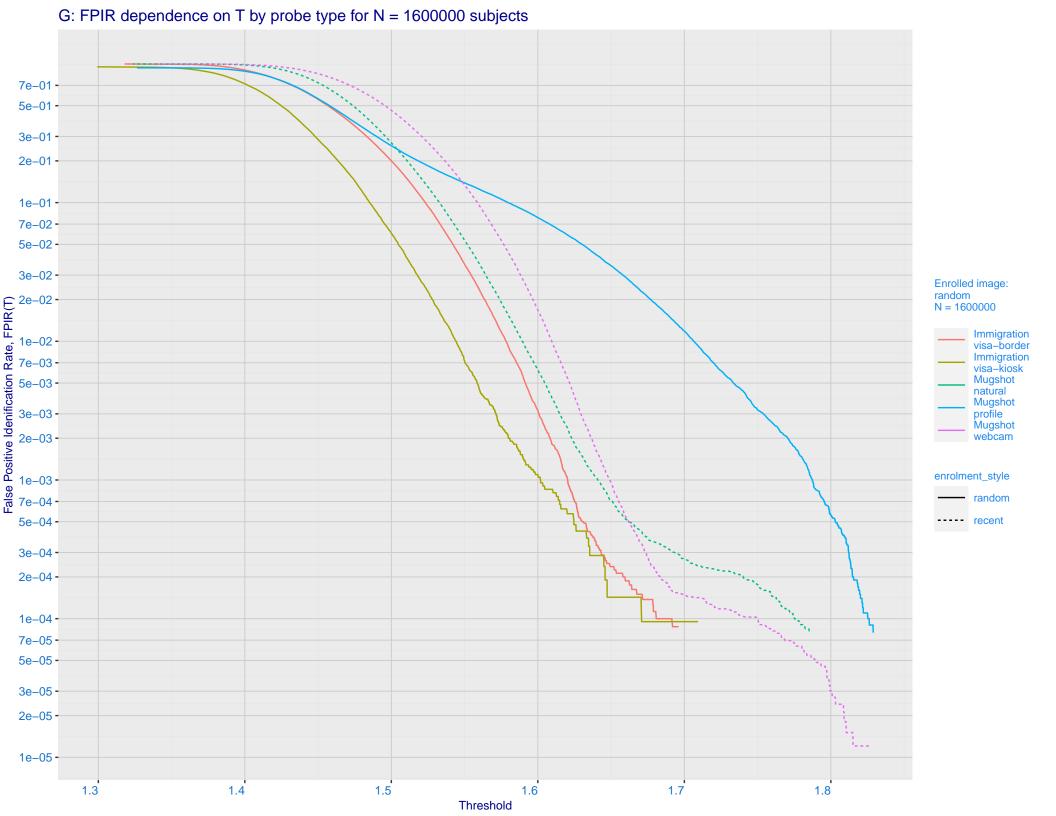
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration** Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 cyberlink 000 0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.002 - 0.001 - 0.500 - 0.500 - 0.200 - 0. enrolment_style consolidated-ONE-MATE random-ONE-MATE recent-ONE-MATE unconsolidated-ALL-MATES unconsolidated-ANY-MATE 0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -

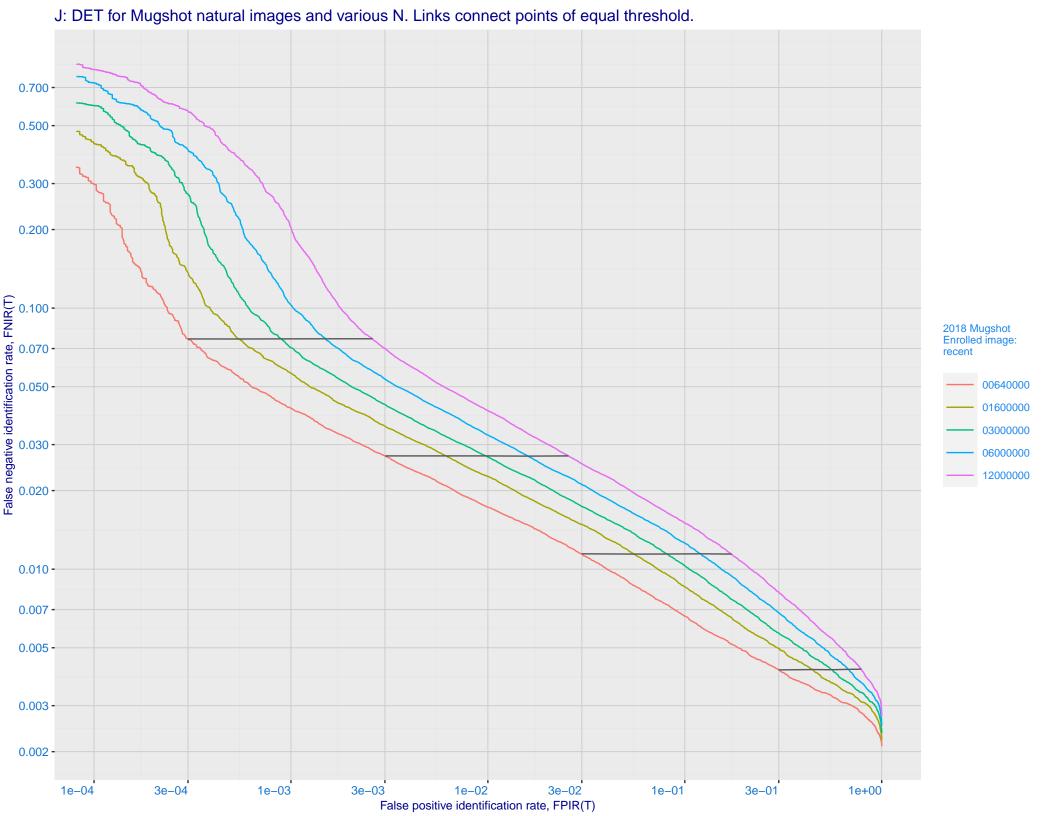
False positive identification rate, FPIR(T)

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

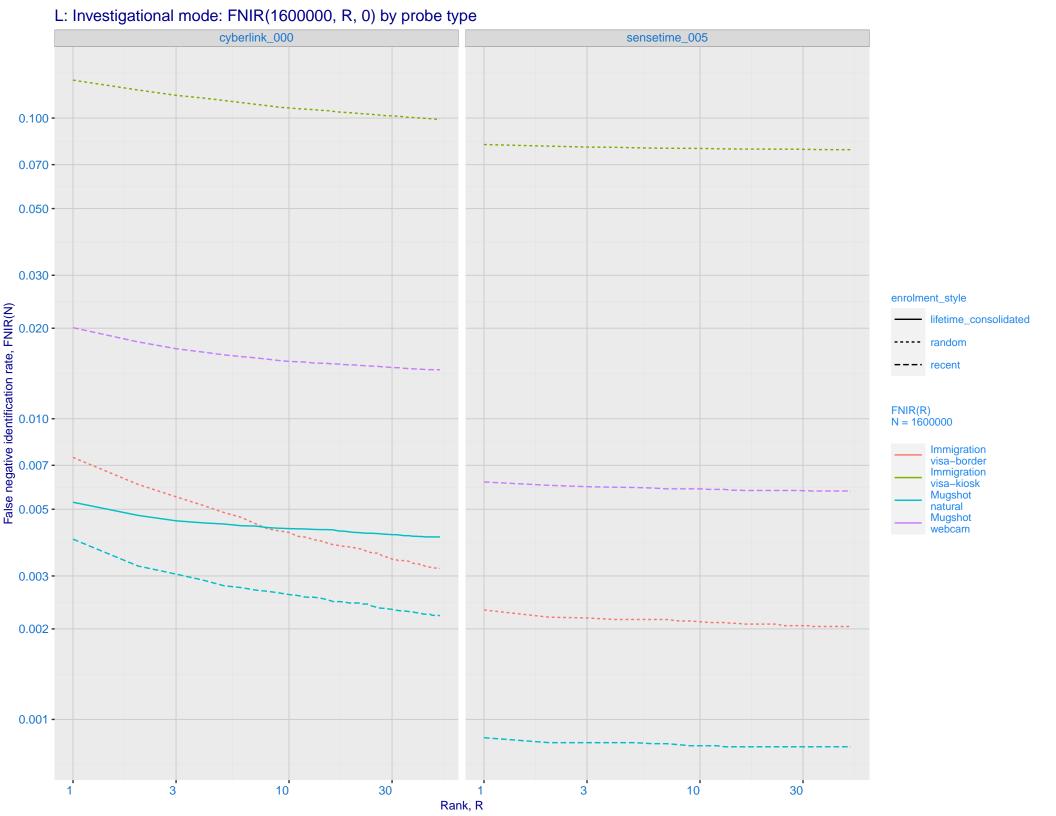


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -7e-02 -5e-02 -3e-02 -3e-02 -1e-02 -**Enrolled images:** recent N = 1600000 Mugshot natural Mugshot webcam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

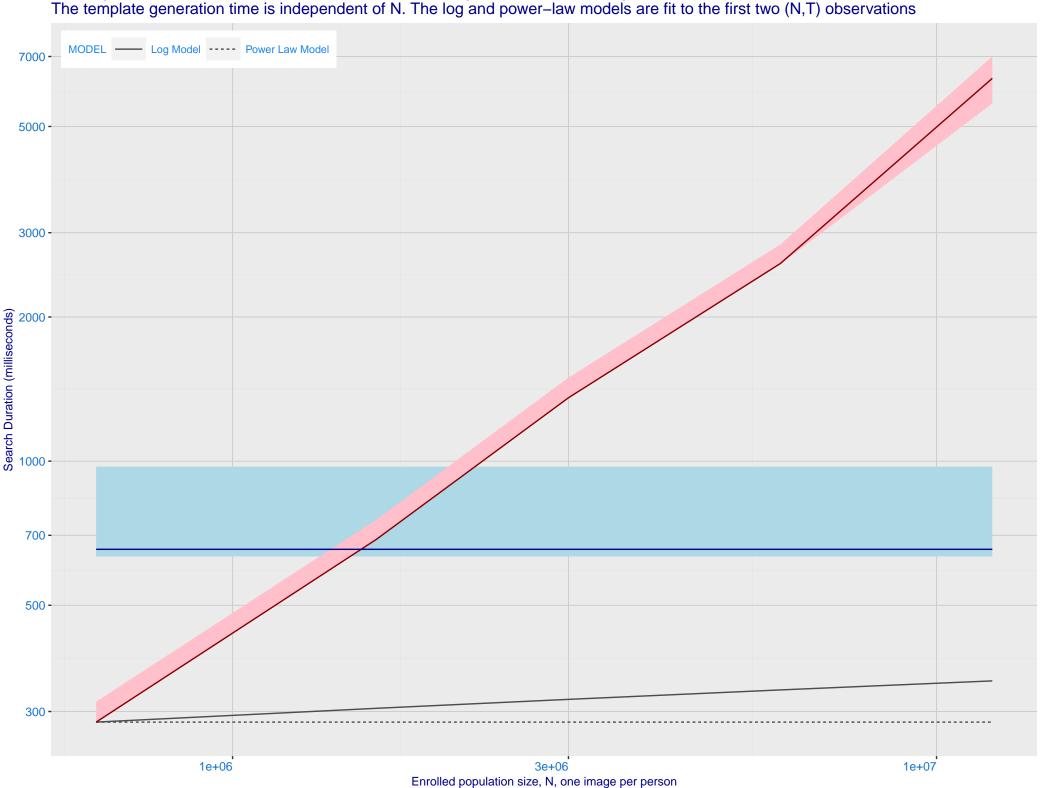




K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 - 0.003 - 0.002 - 0.001 - 0.001 - 0.000 - 0.300 - 0.200 enrolment_style consolidated ---- random --- recent Mugshot webcam Mugshot natural FNIR@Rank = 1 -- cyberlink_000 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



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



