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 62 (out of 259) -- FNIR(1600000, 0, 1) = 0.0040 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 67 (out of 221) -- FNIR(1600000, 0, 1) = 0.0201 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 73 (out of 190) -- FNIR(1600000, 0, 1) = 0.7167 vs. lowest 0.0591 from sensetime_005

Immigration visa-border ranking 46 (out of 142) -- FNIR(1600000, 0, 1) = 0.0074 vs. lowest 0.0014 from visionlabs_009

Immigration visa-kiosk ranking 48 (out of 139) -- FNIR(1600000, 0, 1) = 0.1337 vs. lowest 0.0694 from cib_000

Identification:

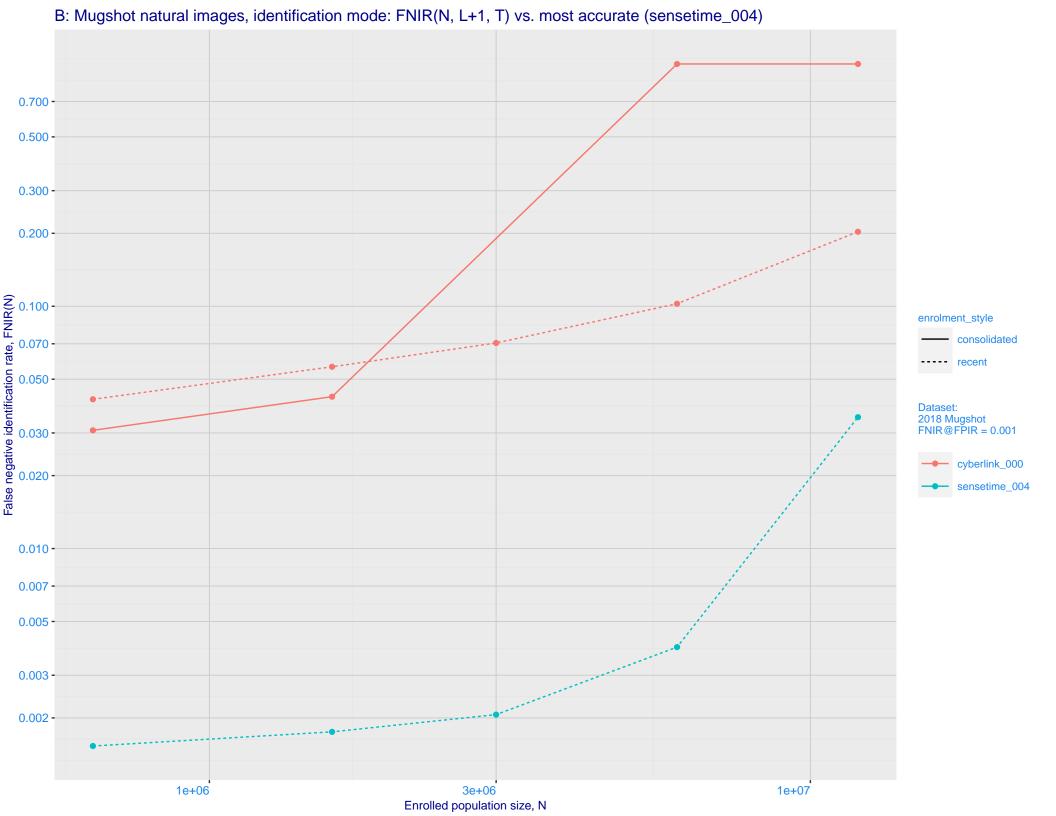
Frontal mugshot ranking 91 (out of 259) -- FNIR(1600000, T, L+1) = 0.0563, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

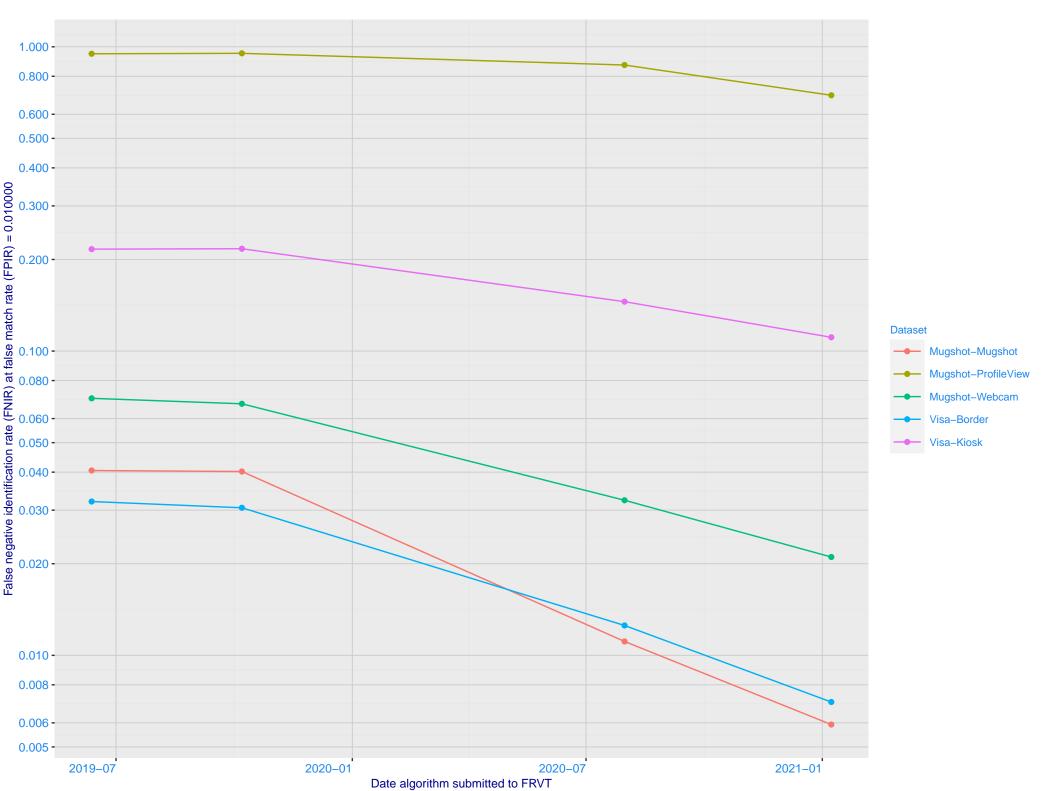
Mugshot webcam ranking 74 (out of 219) -- FNIR(1600000, T, L+1) = 0.1163, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 98 (out of 189) -- FNIR(1600000, T, L+1) = 0.9953, FPIR=0.001000 vs. lowest 0.1733 from sensetime_005

Immigration visa-border ranking 50 (out of 139) -- FNIR(1600000, T, L+1) = 0.0625, FPIR=0.001000 vs. lowest 0.0059 from sensetime_004

Immigration visa-kiosk ranking 43 (out of 134) -- FNIR(1600000, T, L+1) = 0.3394, FPIR=0.001000 vs. lowest 0.1048 from sensetime_005

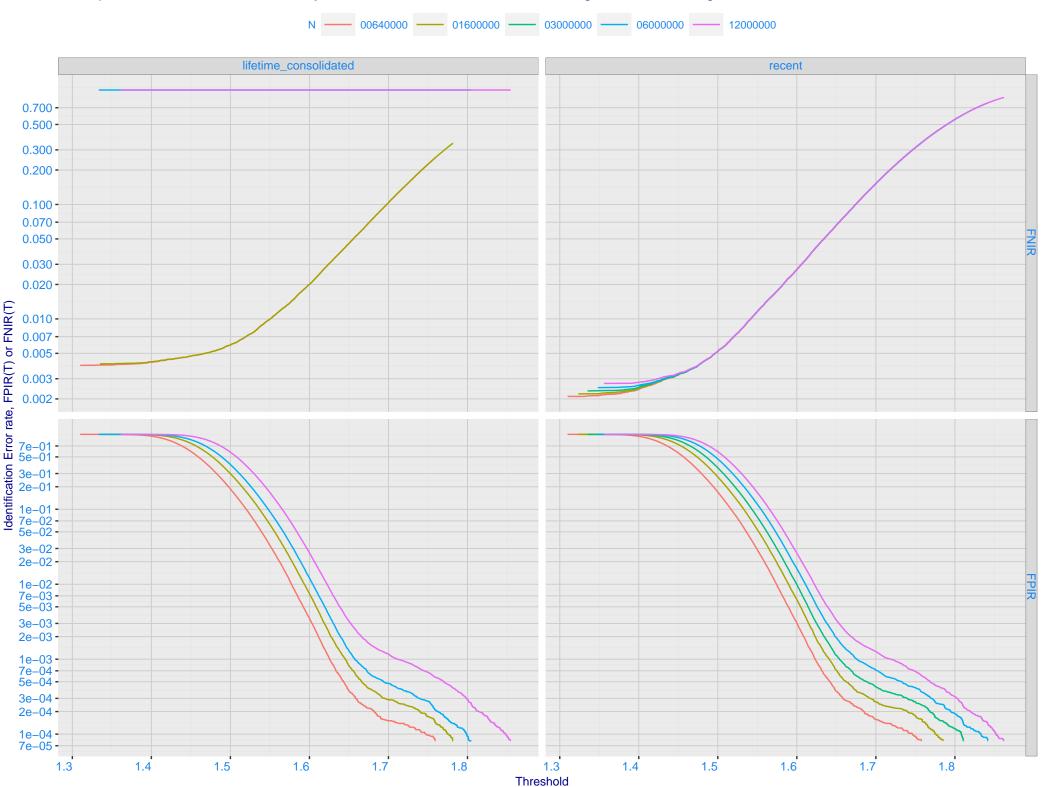




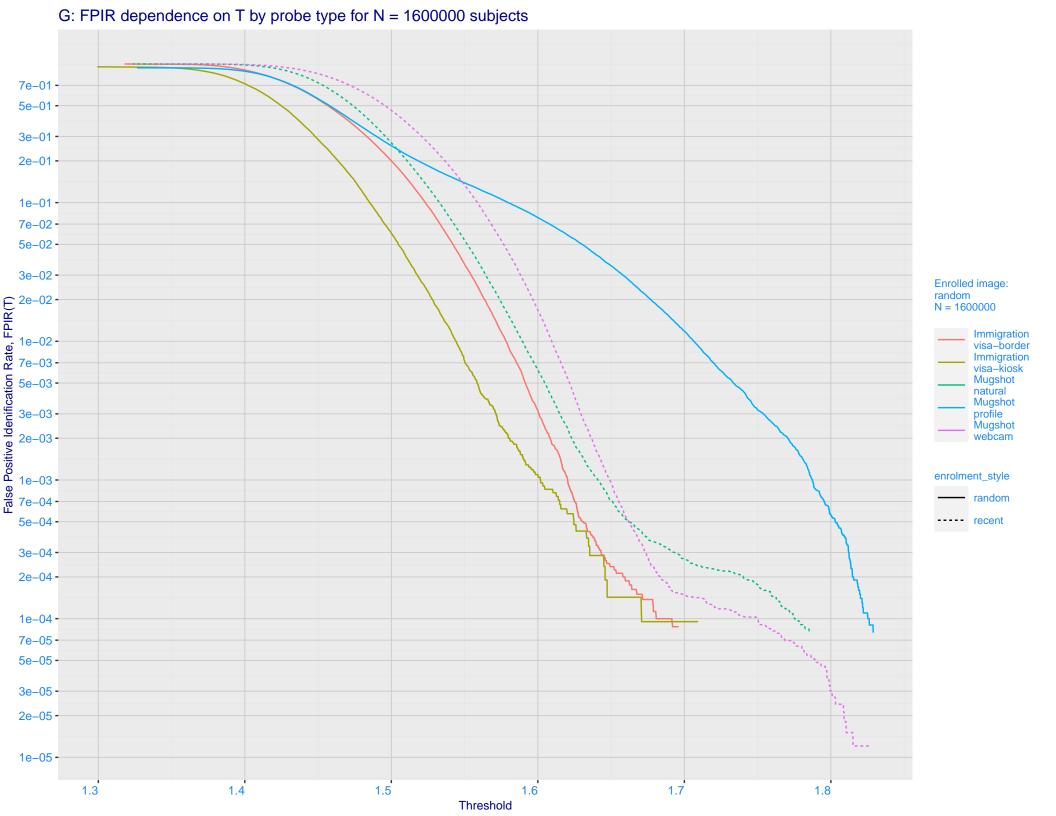
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration** Mugshot **Immigration** visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.002 - 0.0001 - 0.700 - 0.500 - 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 -

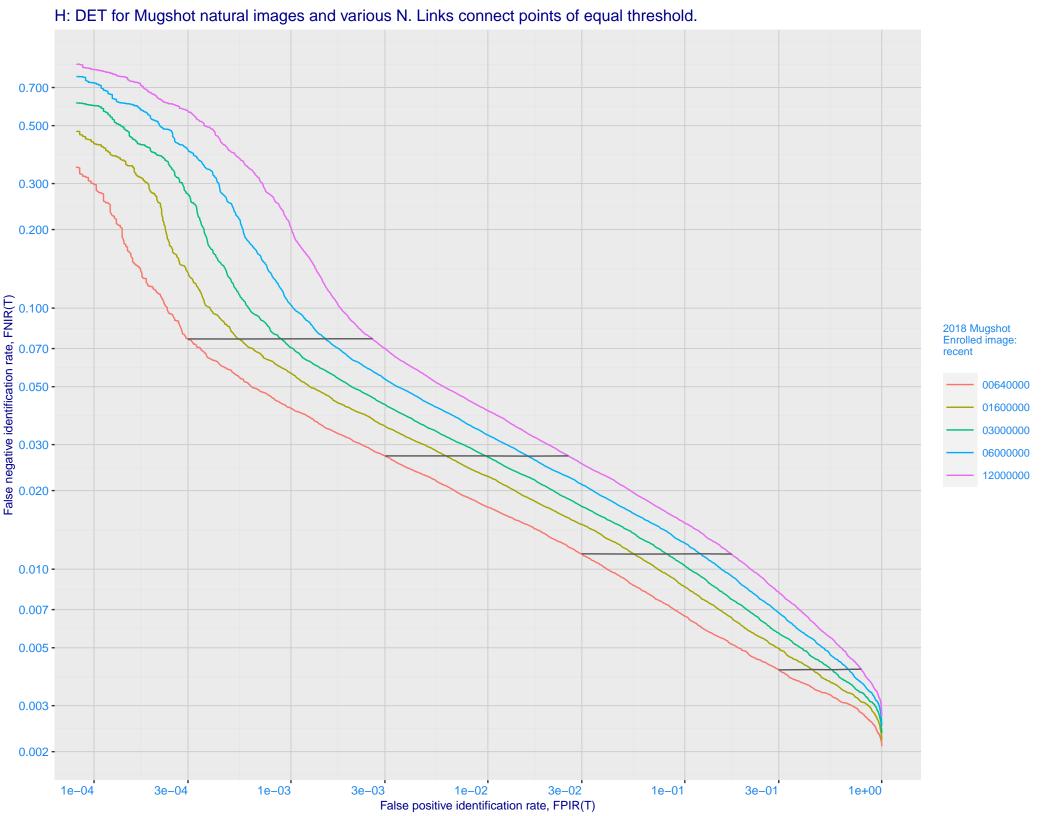
False positive identification rate, FPIR(T)

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)

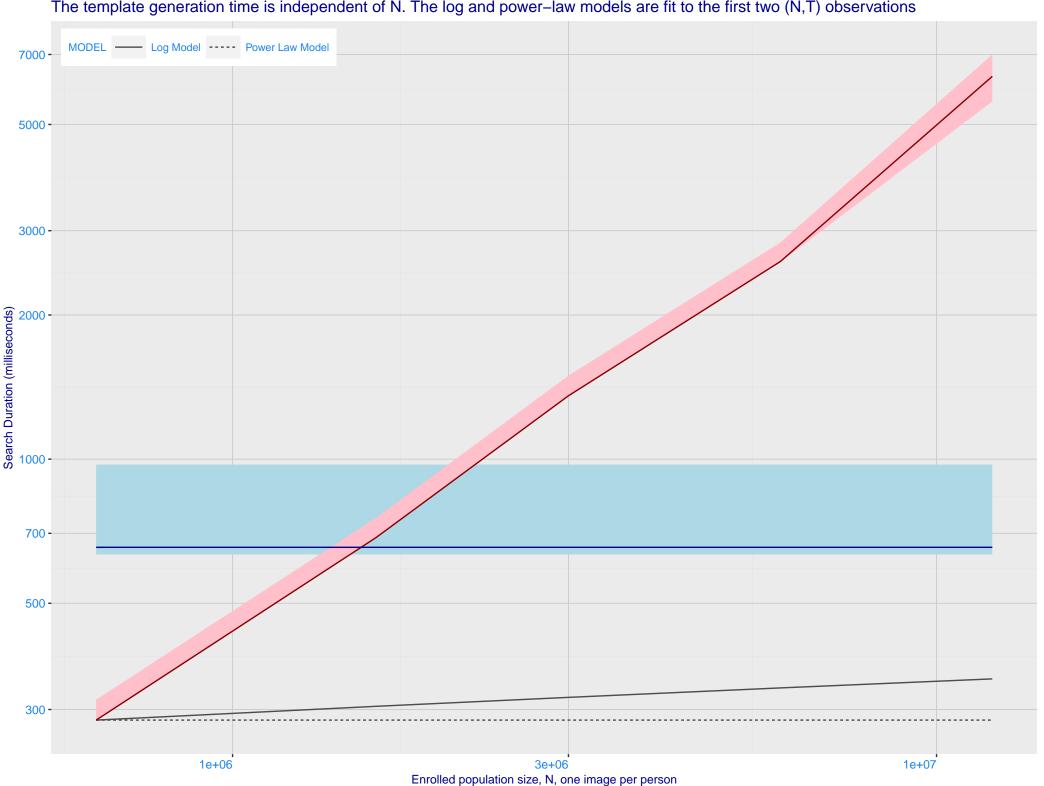




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 - 0.003 - 0.002 - 0.001 - 0.001 - 0.000 - 0.300 - 0.200 enrolment_style consolidated ---- random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

J: Investigational mode: FNIR(1600000, R, 0) by probe type cyberlink_000 sensetime_005 0.100 -0.070 -0.050 -0.030 enrolment_style False negative identification rate, FNIR(N) 0.000 - 0.000 - 0.0007 - 0.0005 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 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



