A: Datasheet

Algorithm: cyberlink_001

Developer: Cyberlink Corp

Submission Date: 2019_10_07

Template size: 2052 bytes

Template time (2.5 percentile): 423 msec

Template time (median): 424 msec

Template time (97.5 percentile): 464 msec

Investigation:

Frontal mugshot ranking 109 (out of 329) -- FNIR(1600000, 0, 1) = 0.0035 vs. lowest 0.0009 from sensetime_006

Mugshot webcam ranking 113 (out of 291) -- FNIR(1600000, 0, 1) = 0.0175 vs. lowest 0.0057 from sensetime_006

Mugshot profile ranking 135 (out of 260) — FNIR(1600000, 0, 1) = 0.7306 vs. lowest 0.0550 from sensetime_006

Immigration visa-border ranking 94 (out of 218) — FNIR(1600000, 0, 1) = 0.0066 vs. lowest 0.0009 from sensetime_006

Immigration visa-kiosk ranking 104 (out of 215) -- FNIR(1600000, 0, 1) = 0.1330 vs. lowest 0.0487 from cubox_000

Identification:

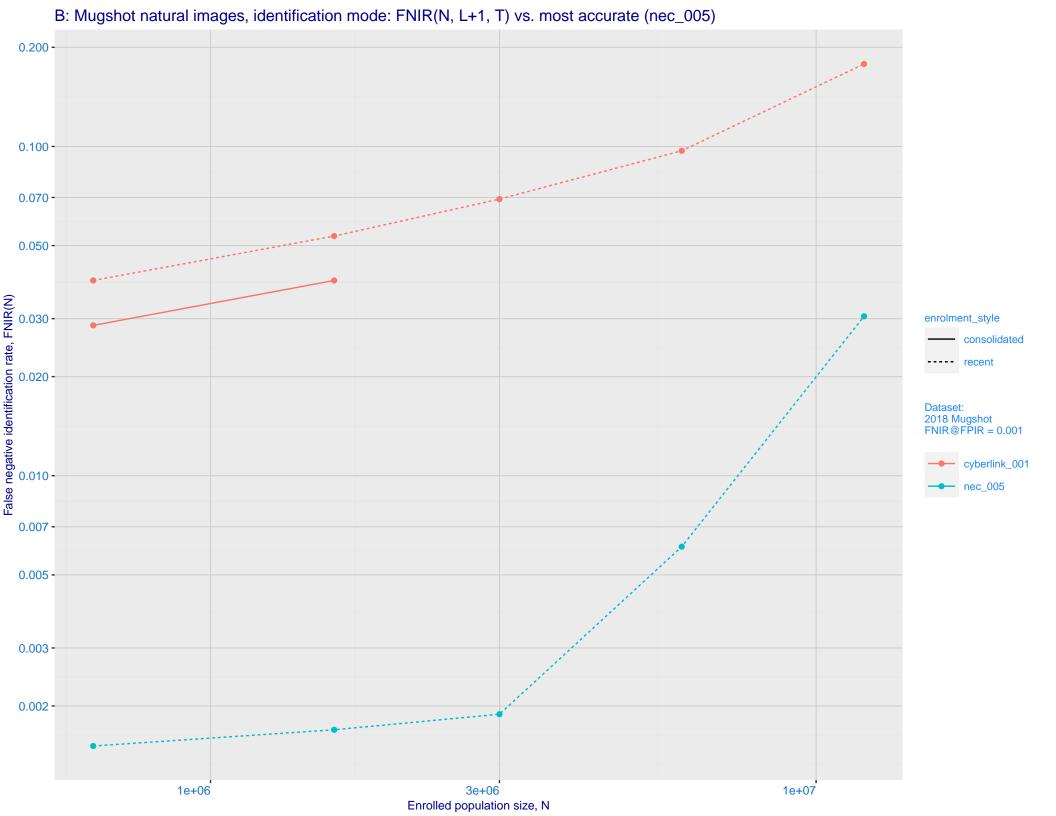
Frontal mugshot ranking 143 (out of 329) -- FNIR(1600000, T, L+1) = 0.0534, FPIR=0.001000 vs. lowest 0.0017 from nec_005

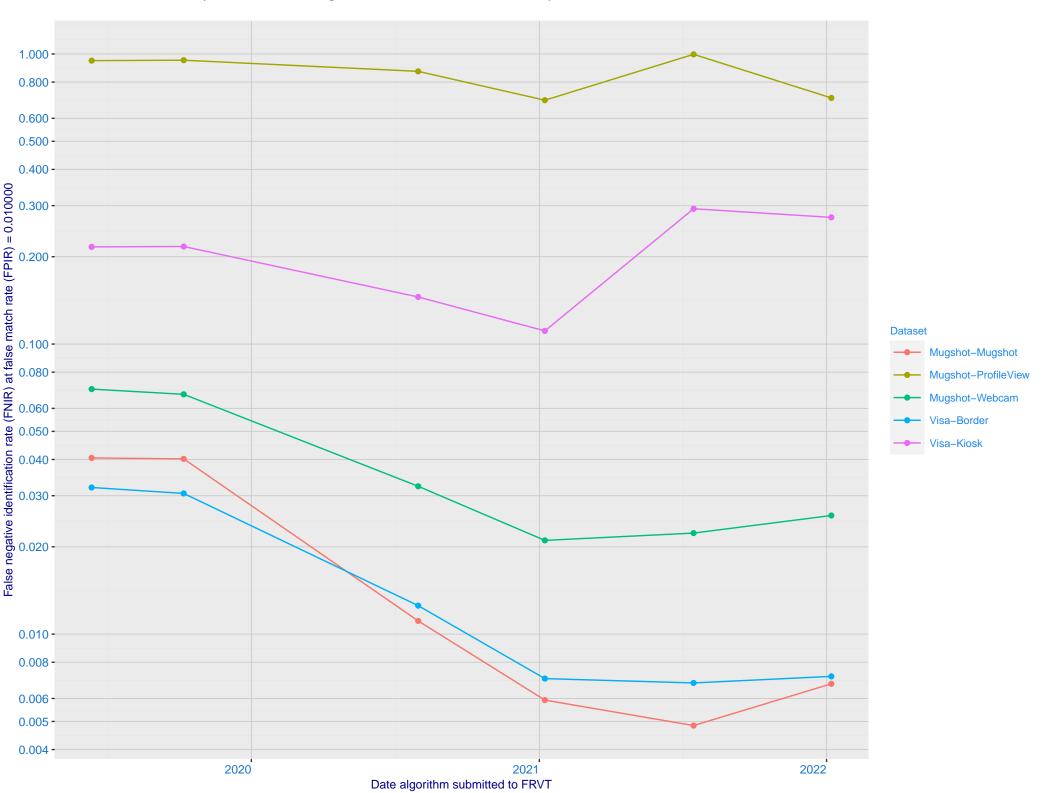
Mugshot webcam ranking 127 (out of 289) -- FNIR(1600000, T, L+1) = 0.1087, FPIR=0.001000 vs. lowest 0.0120 from nec_005

Mugshot profile ranking 134 (out of 259) -- FNIR(1600000, T, L+1) = 0.9947, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000

Immigration visa-border ranking 103 (out of 217) -- FNIR(1600000, T, L+1) = 0.0624, FPIR=0.001000 vs. lowest 0.0032 from paravision_009

Immigration visa-kiosk ranking 127 (out of 212) -- FNIR(1600000, T, L+1) = 0.6756, FPIR=0.001000 vs. lowest 0.0728 from paravision_009

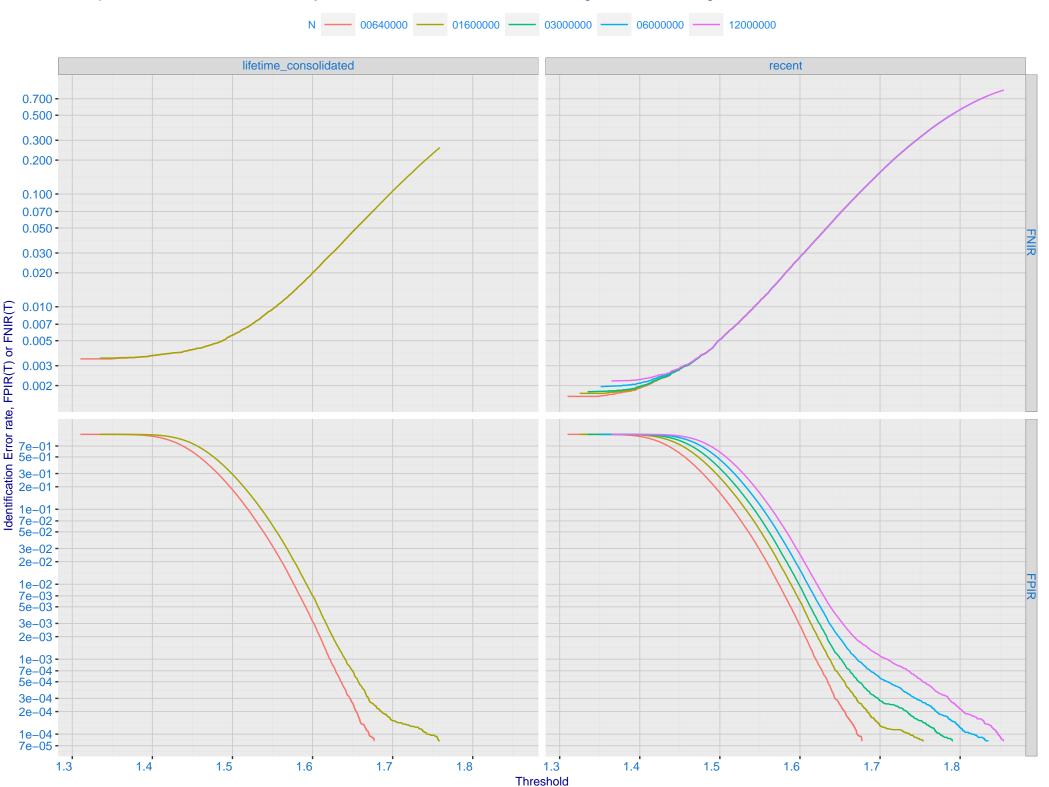




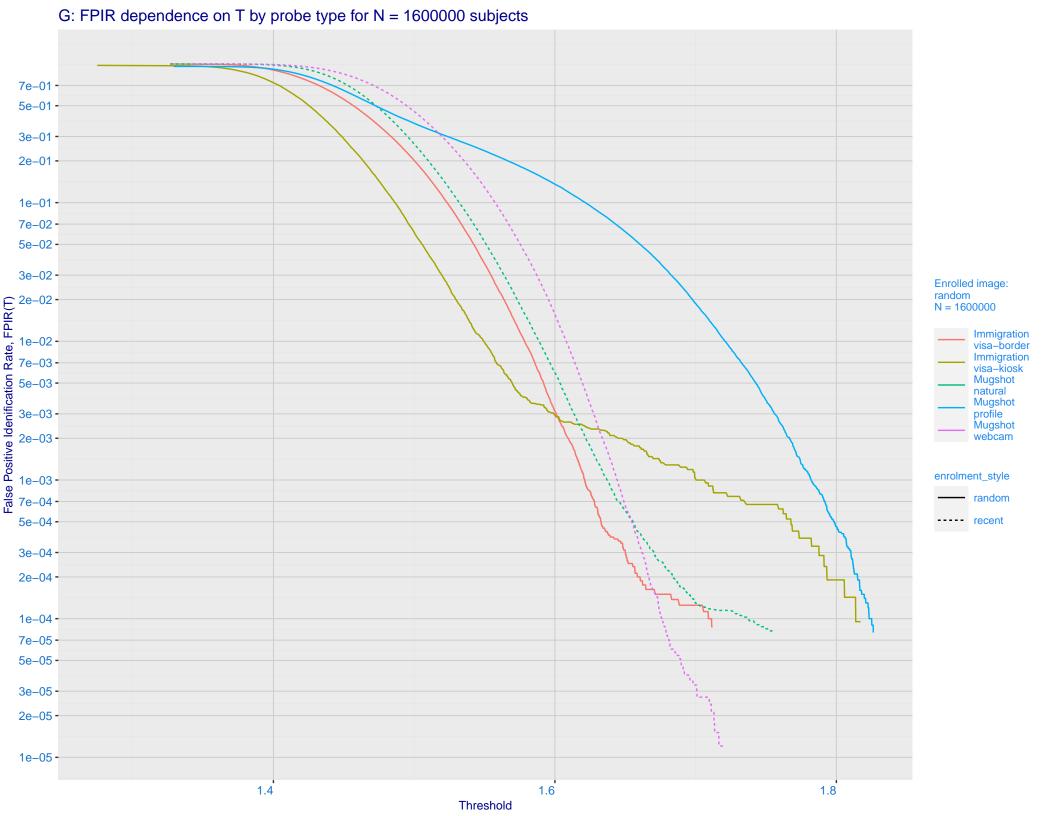
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration Immigration** Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -Ealse negative identification rate, FNIR(T) 0.003 - 0.002 - 0.001 - 0.700 - 0.500 - 0.200 - 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 -1e-03e-04e-03e-03e-03e-02e-02e-01e+001e-03e-04e-03e-02e-02e-02e-01e+001e-03e-04e-03e-04e-03e-01e+00

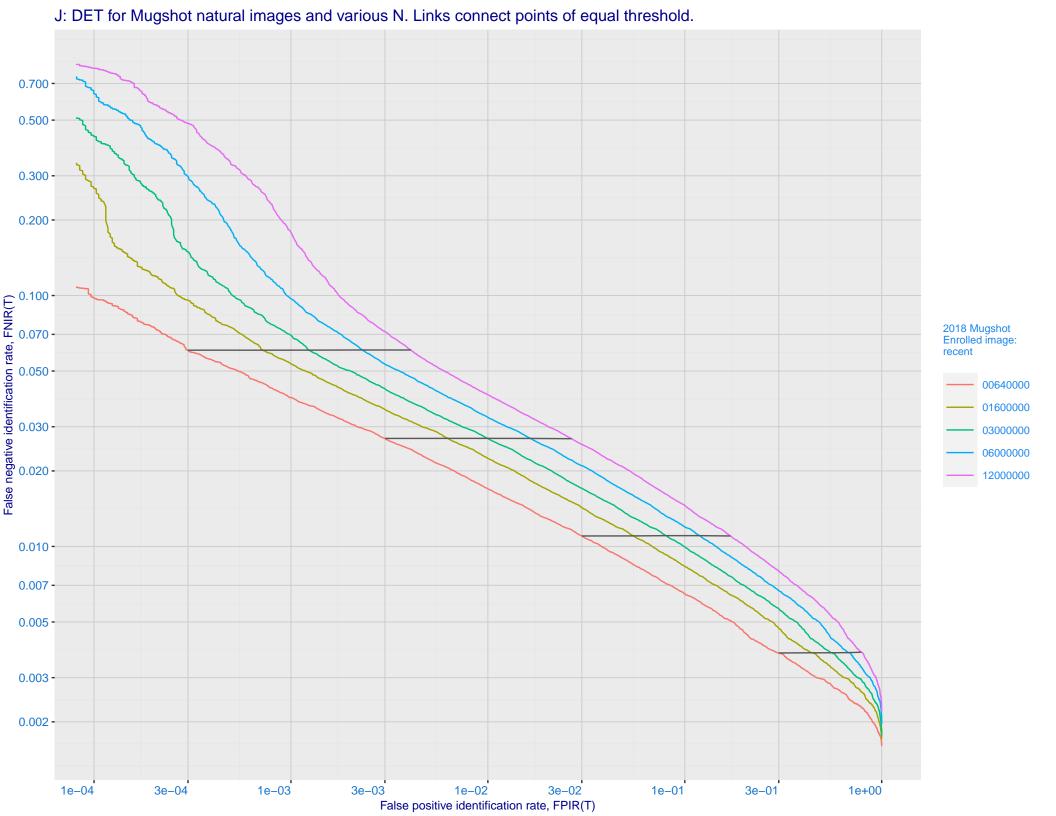
False positive identification rate, FPIR(T)

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

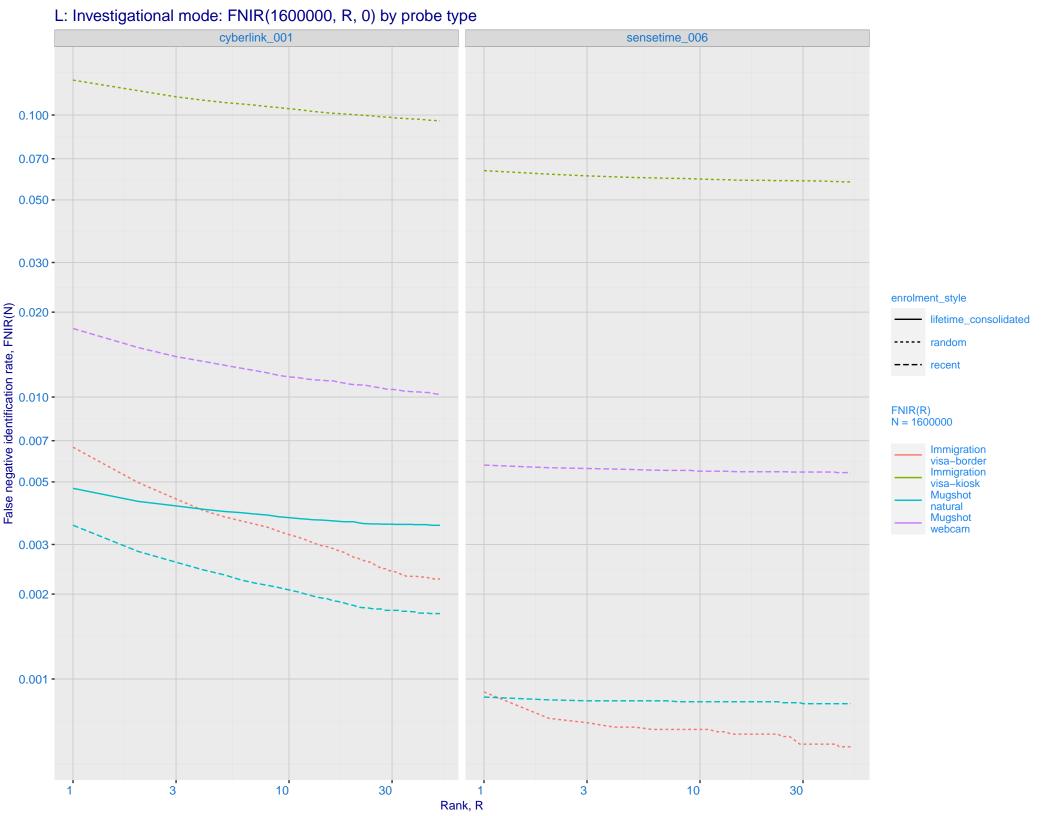


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -7e-02 -5e-02 -5e-02 -3e-02 -1e-02 -**Enrolled images:** recent N = 1600000 Mugshot natural Mugshot webcam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

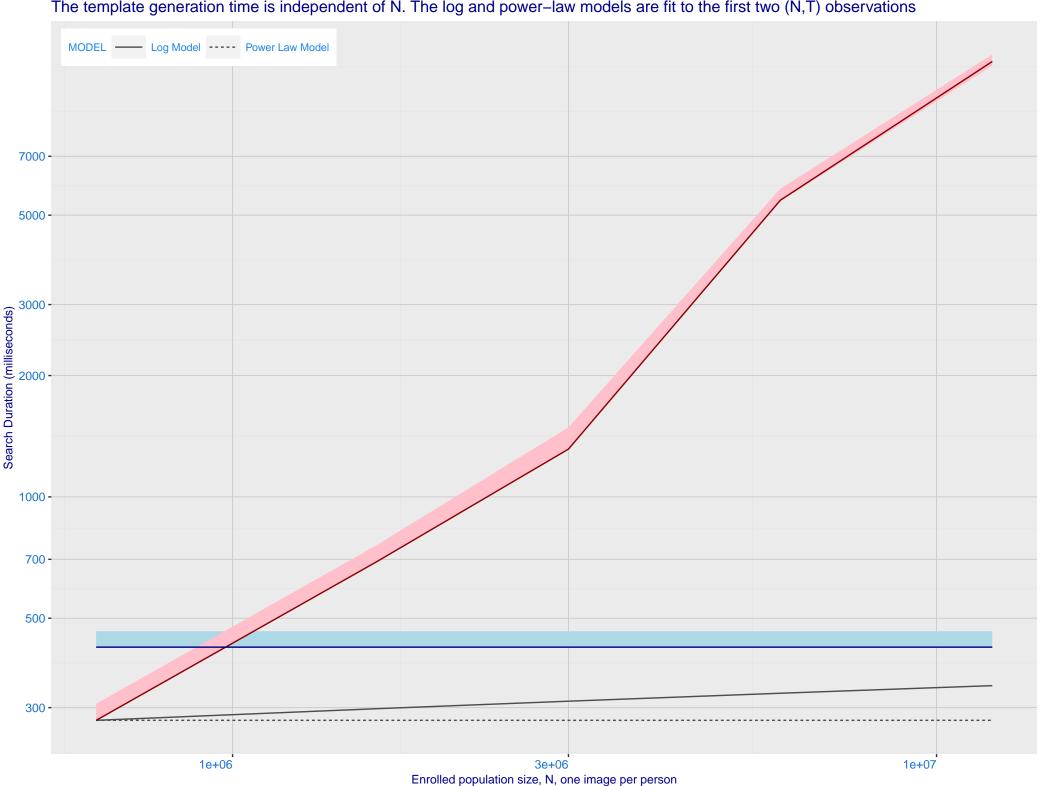




K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_006) Immigration **Immigration** visa-border visa-kiosk 0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Palse negative identification rate, FNIR(N) 0.002 - 0.001 - 0.100 - 0.000 - 0.050 - 0. enrolment_style consolidated ---- random --- recent Mugshot webcam Mugshot natural FNIR@Rank = 1 -- cyberlink_001 sensetime_006 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



