A: Datasheet

Algorithm: everai_1

Developer: Paravision (EverAI)

Submission Date: 2018_06_21

Template size: 2048 bytes

Template time (2.5 percentile): 575 msec

Template time (median): 577 msec

Template time (97.5 percentile): 631 msec

Investigation:

Frontal mugshot ranking 74 (out of 279) -- FNIR(1600000, 0, 1) = 0.0038 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 86 (out of 241) -- FNIR(1600000, 0, 1) = 0.0204 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 38 (out of 210) -- FNIR(1600000, 0, 1) = 0.3293 vs. lowest 0.0587 from xforwardai_002

Immigration visa-border ranking 145 (out of 168) -- FNIR(1600000, 0, 1) = 0.4144 vs. lowest 0.0013 from visionlabs_010

Immigration visa-kiosk ranking 137 (out of 165) -- FNIR(1600000, 0, 1) = 0.4845 vs. lowest 0.0568 from cloudwalk_hr_000

Identification:

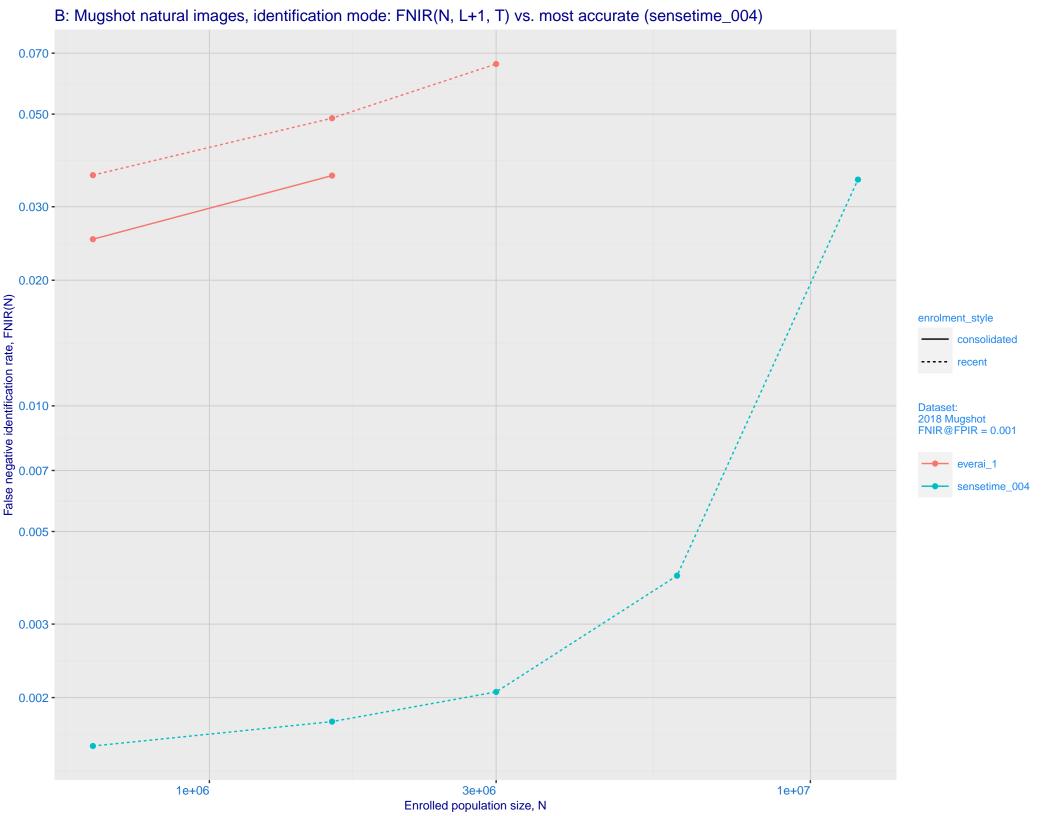
Frontal mugshot ranking 91 (out of 279) -- FNIR(1600000, T, L+1) = 0.0489, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 100 (out of 236) -- FNIR(1600000, T, L+1) = 0.1273, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 134 (out of 209) -- FNIR(1600000, T, L+1) = 0.9987, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000

Immigration visa-border ranking 118 (out of 167) -- FNIR(1600000, T, L+1) = 0.4442, FPIR=0.001000 vs. lowest 0.0047 from idemia_008

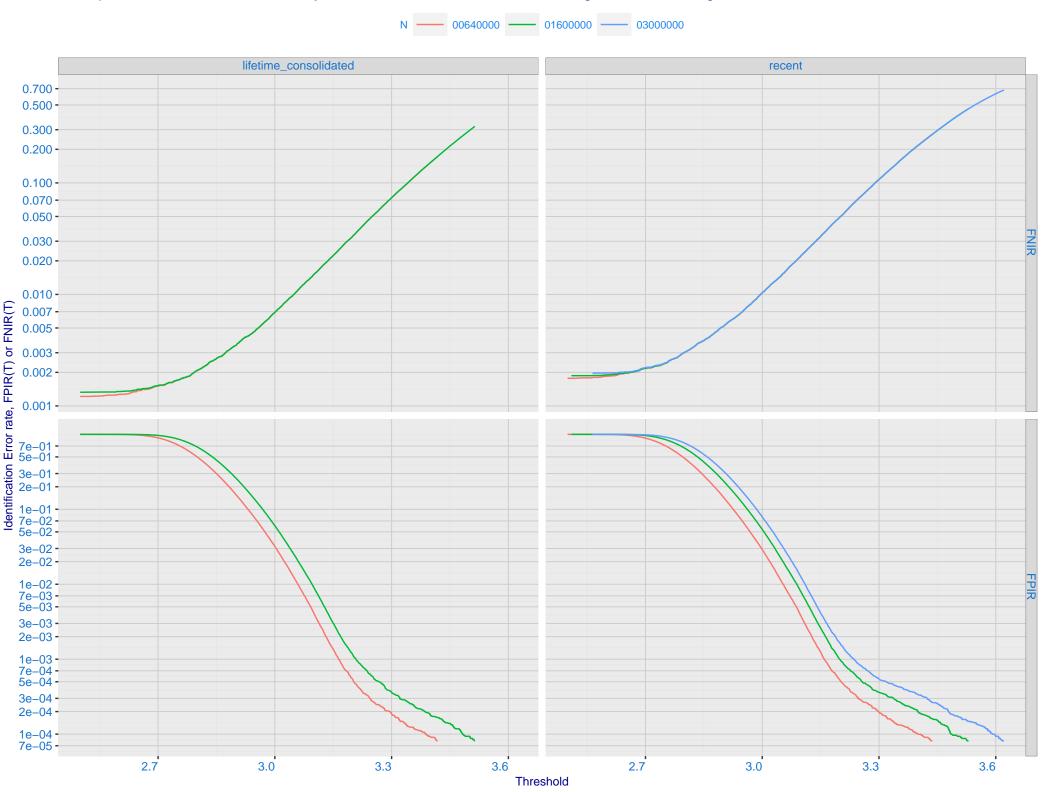
Immigration visa-kiosk ranking 92 (out of 162) -- FNIR(1600000, T, L+1) = 0.7416, FPIR=0.001000 vs. lowest 0.0996 from cloudwalk_hr_000



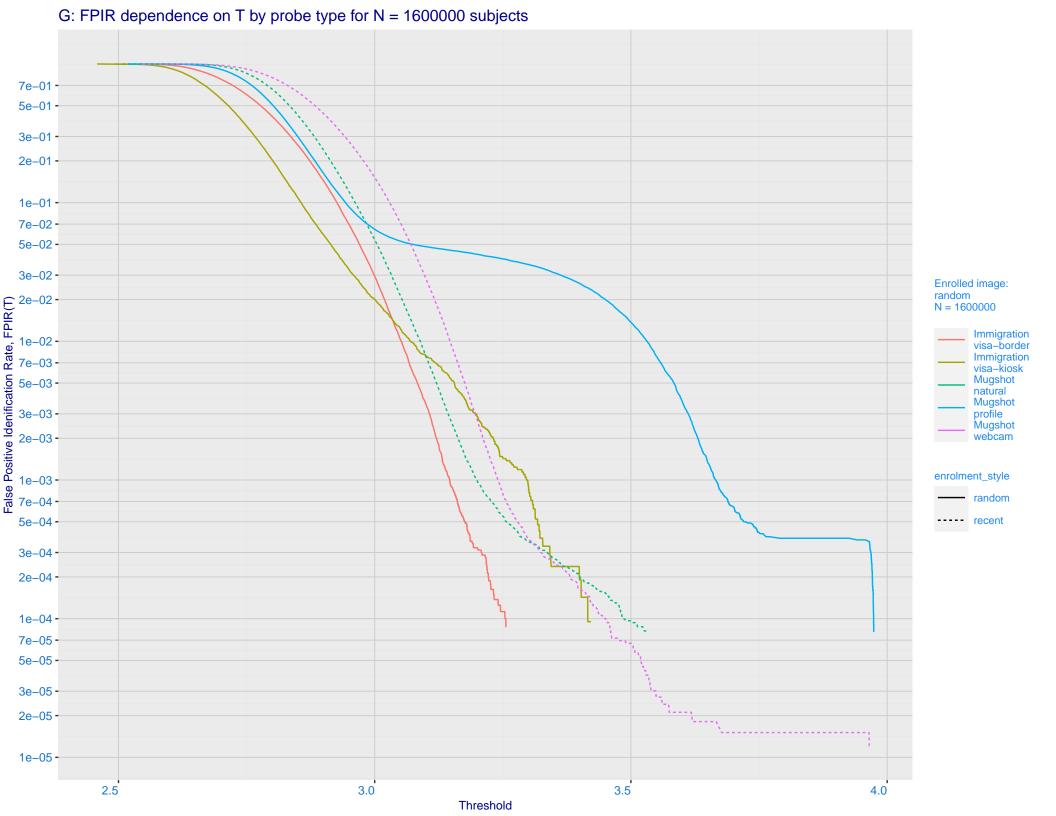
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.000 - 0.000 - 0.500 - 0.200 - 0. enrolment_style consolidated-ONE-MATE 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 -

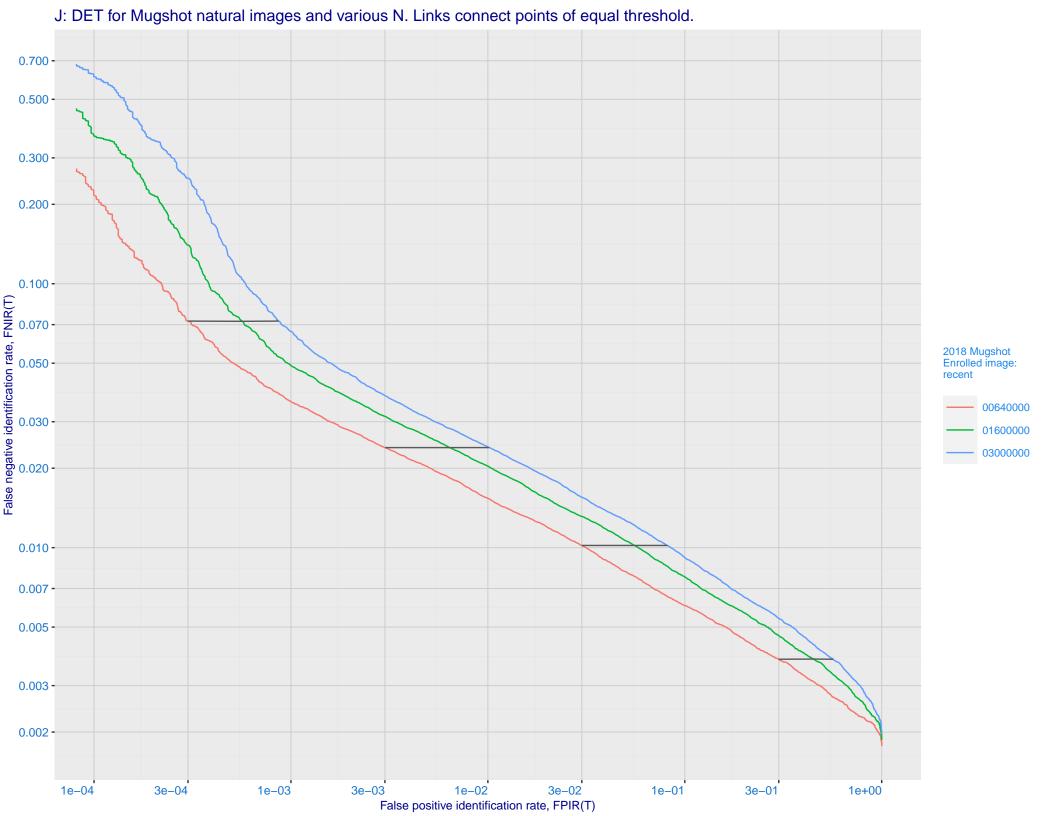
False positive identification rate, FPIR(T)

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)





K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Ealse negative identification rate, FNIR(N) 0.003 - 0.001 - 0.500 - 0.200 - 0.100 - 0. enrolment_style consolidated ---- random --- recent - - - unconsolidated Mugshot Mugshot webcam natural FNIR@Rank = 1 everai_1 sensetime_005 0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -1e+07 1e+06 3e+06 1e+07 1e+06 3e+06 Enrolled population size, N

L: Investigational mode: FNIR(1600000, R, 0) by probe type everai_1 sensetime_005 0.500 -0.300 -0.200 -0.100 -0.070 enrolment_style Ealse negative identification rate, FNIR(N) - 0.000 - lifetime_consolidated ---- random --- recent FNIR(R) N = 1600000 Immigration visa-border Immigration visa-kiosk Mugshot natural Mugshot webcam 0.005 -0.003 -0.002 -0.001 -10 30 3 10 30 Rank, R

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 - Log Model ---- Power Law Model 700 -500 -Search Duration (milliseconds)
000 200 -1e+06 2e+06 3e+06

Enrolled population size, N, one image per person

Q: Identification FNIR(N, T, L+1) and Investigational FNIR(N, 0, R) under ageing



