A: Datasheet

Algorithm: everai_3

Developer: Paravision (EverAI)

Submission Date: 2018_10_30

Template size: 2048 bytes

Template time (2.5 percentile): 716 msec

Template time (median): 717 msec

Template time (97.5 percentile): 794 msec

Investigation:

Frontal mugshot ranking 53 (out of 265) -- FNIR(1600000, 0, 1) = 0.0031 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 69 (out of 227) -- FNIR(1600000, 0, 1) = 0.0194 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 24 (out of 196) -- FNIR(1600000, 0, 1) = 0.2523 vs. lowest 0.0591 from sensetime_005

Immigration visa-border ranking 71 (out of 148) -- FNIR(1600000, 0, 1) = 0.0154 vs. lowest 0.0013 from visionlabs_010

Immigration visa-kiosk ranking 68 (out of 145) -- FNIR(1600000, 0, 1) = 0.1667 vs. lowest 0.0568 from hr_000

Identification:

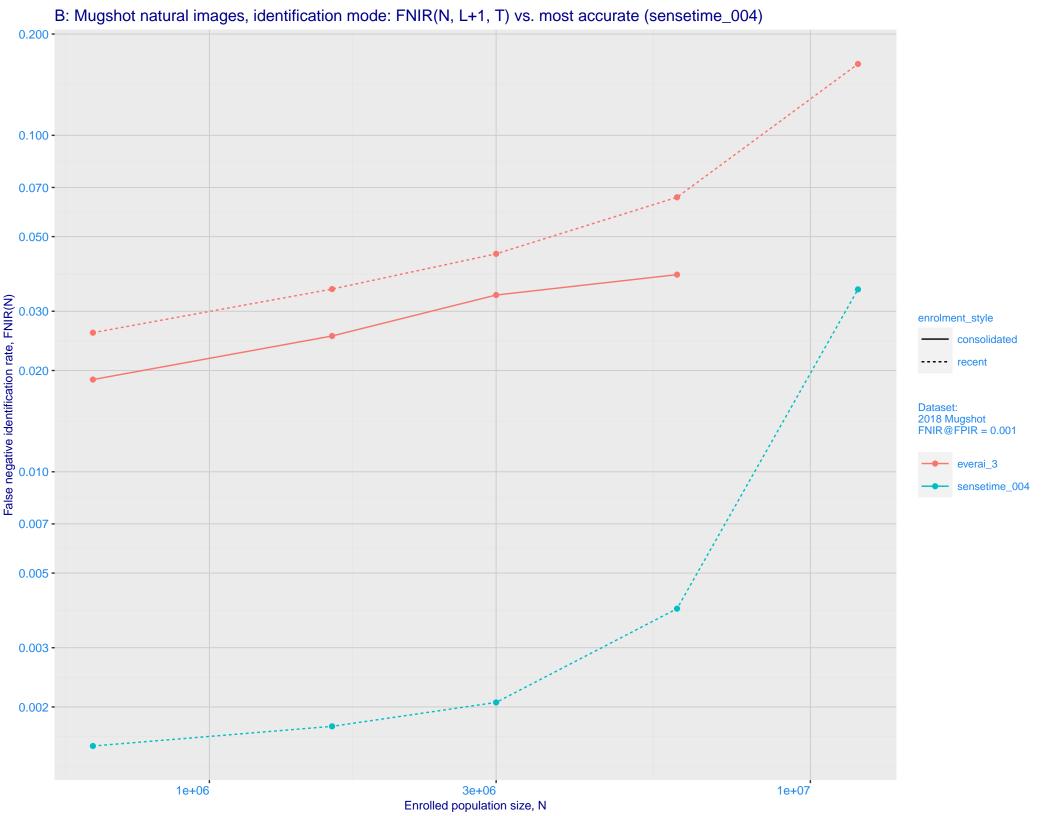
Frontal mugshot ranking 57 (out of 265) -- FNIR(1600000, T, L+1) = 0.0349, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 61 (out of 225) -- FNIR(1600000, T, L+1) = 0.0955, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 94 (out of 195) -- FNIR(1600000, T, L+1) = 0.9943, FPIR=0.001000 vs. lowest 0.1331 from hr_000

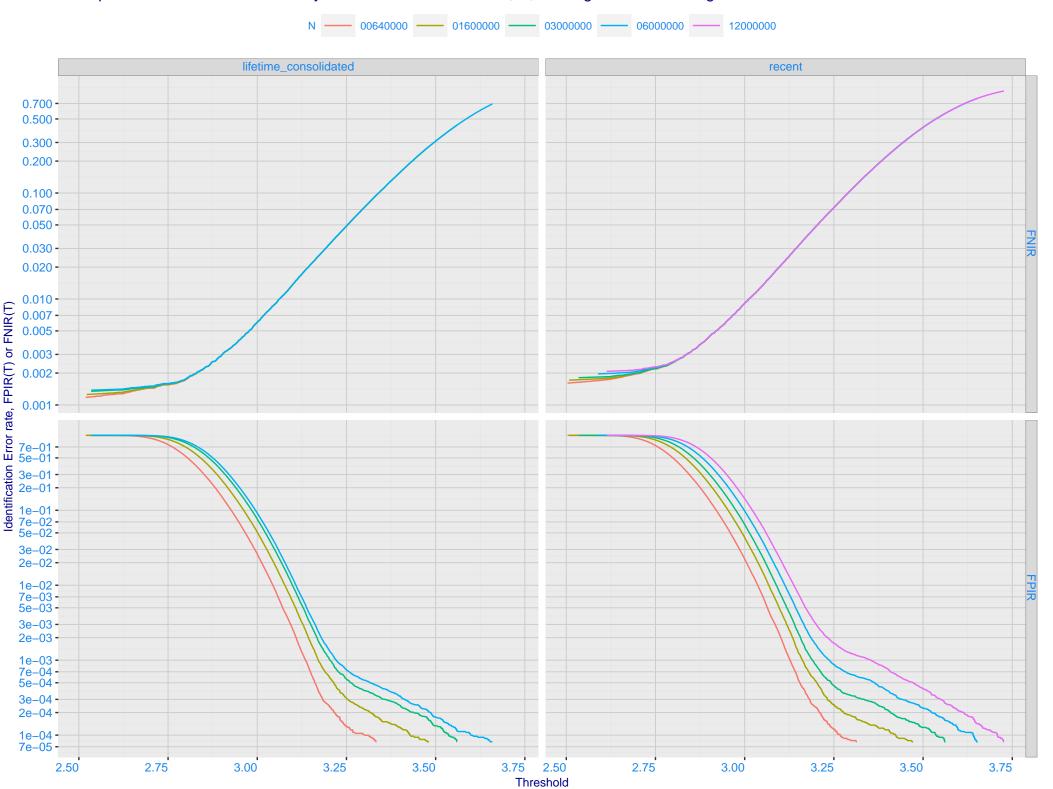
Immigration visa-border ranking 49 (out of 146) -- FNIR(1600000, T, L+1) = 0.0575, FPIR=0.001000 vs. lowest 0.0049 from hr_000

Immigration visa-kiosk ranking 36 (out of 141) -- FNIR(1600000, T, L+1) = 0.2978, FPIR=0.001000 vs. lowest 0.0996 from hr_000

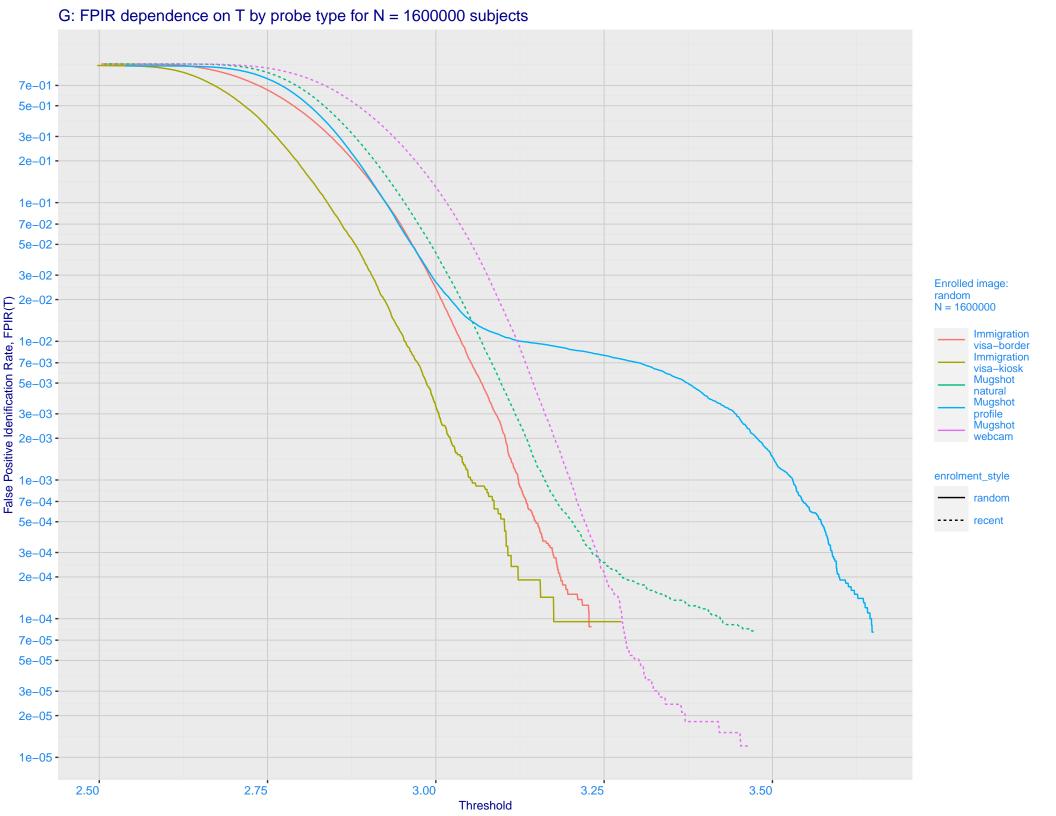


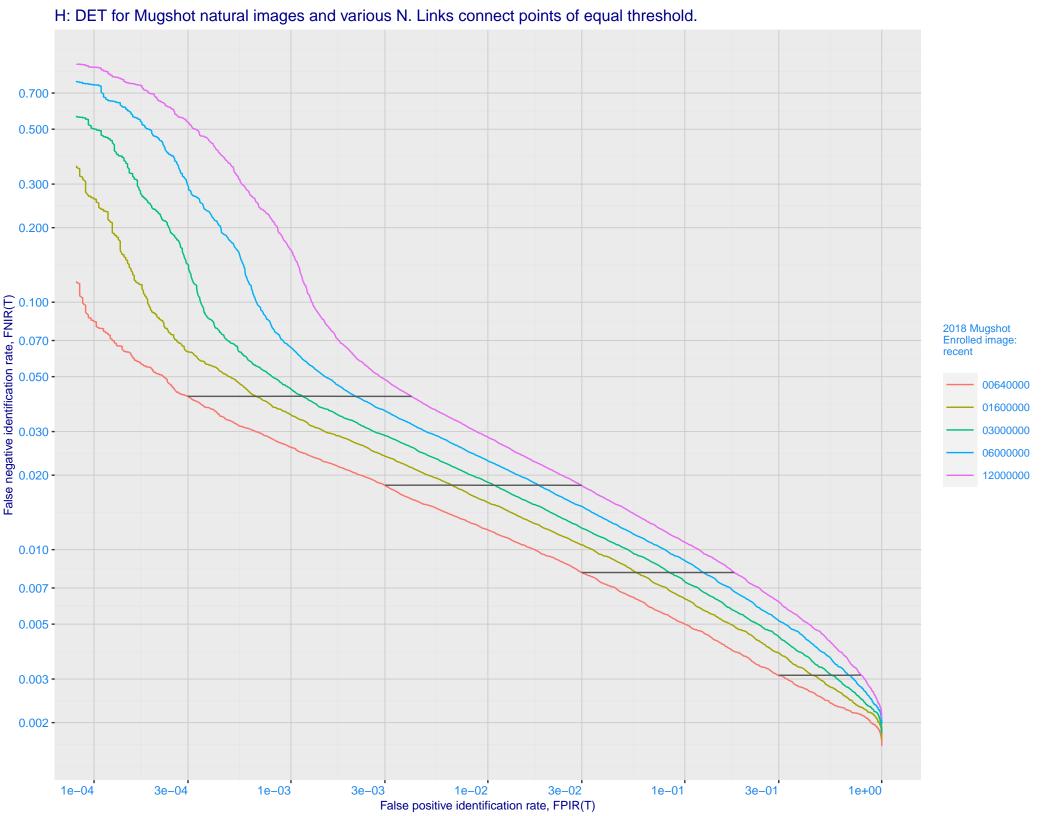
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration Immigration** Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.0001 - 0.700 - 0.500 - 0.200 - 0.100 - 0 enrolment_style consolidated-ONE-MATE 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 0.200 -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 - 0.200 - 0.100 - 0.070 - 0.050 - 0. enrolment_style consolidated ---- random --- recent Mugshot webcam Mugshot natural FNIR@Rank = 1 everai_3 sensetime_005 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

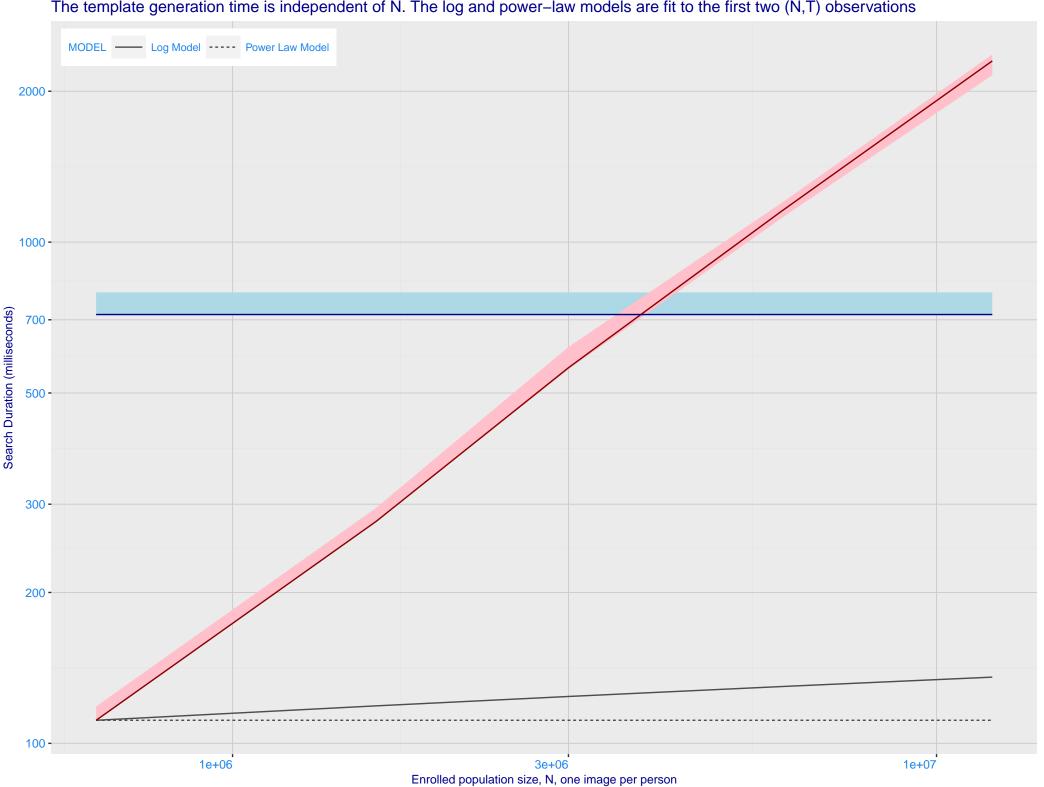
J: Investigational mode: FNIR(1600000, R, 0) by probe type everai_3 sensetime_005 0.200 -0.100 -0.070 -0.050 -0.030 enrolment_style False negative identification rate, FNIR(N)

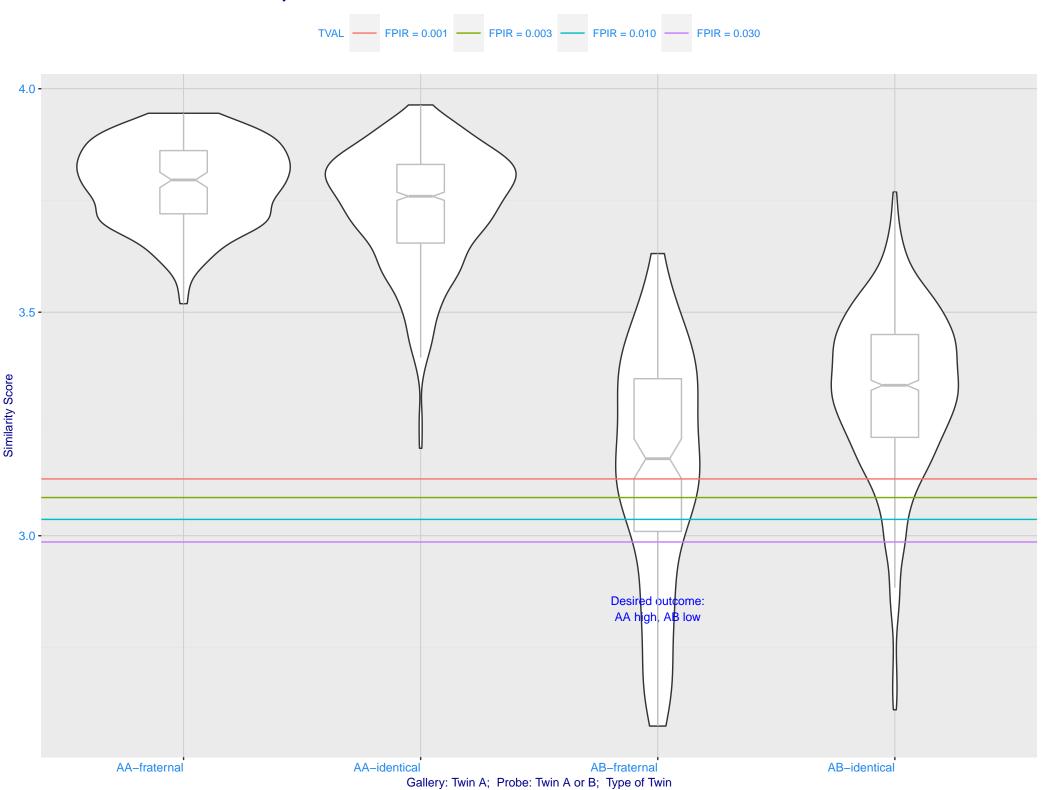
0.000

0.000

0.000 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 3 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



