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 58 (out of 259) — FNIR(1600000, 0, 1) = 0.0038 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 69 (out of 221) -- FNIR(1600000, 0, 1) = 0.0204 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 25 (out of 190) -- FNIR(1600000, 0, 1) = 0.3293 vs. lowest 0.0591 from sensetime_005

Immigration visa-border ranking 121 (out of 142) -- FNIR(1600000, 0, 1) = 0.4144 vs. lowest 0.0014 from visionlabs_009

Immigration visa-kiosk ranking 113 (out of 139) -- FNIR(1600000, 0, 1) = 0.4845 vs. lowest 0.0694 from cib_000

Identification:

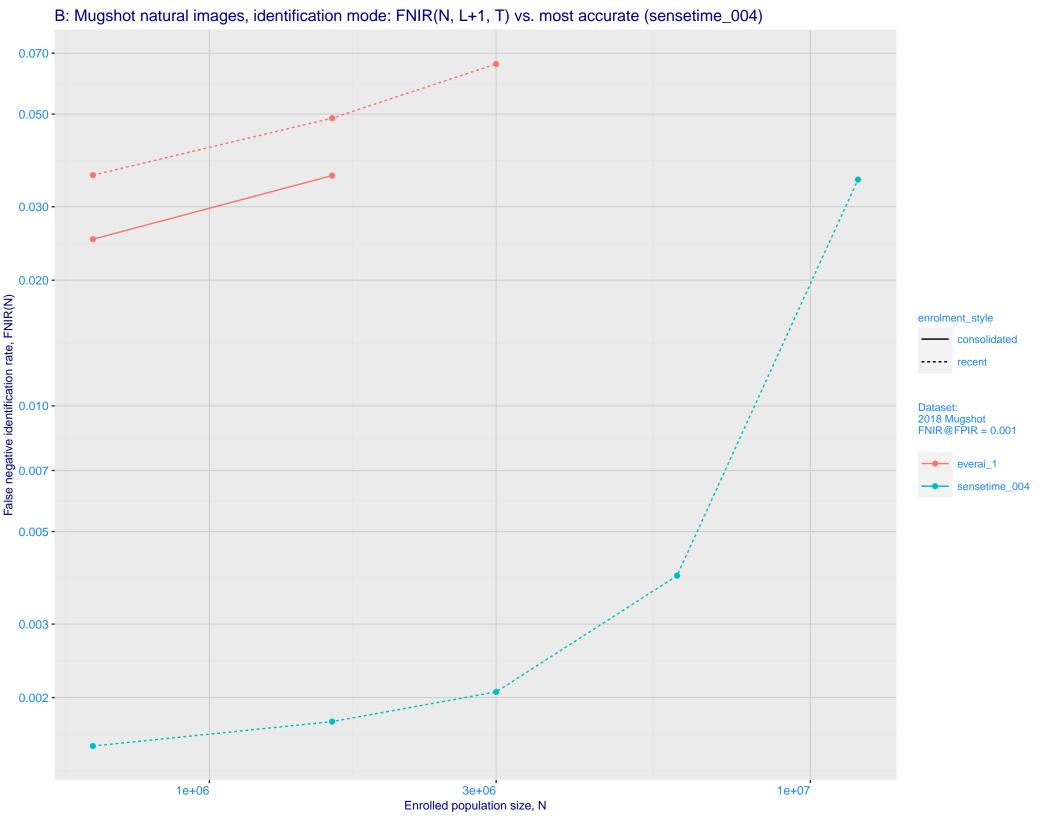
Frontal mugshot ranking 76 (out of 259) -- FNIR(1600000, T, L+1) = 0.0489, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 86 (out of 219) -- FNIR(1600000, T, L+1) = 0.1273, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 122 (out of 189) -- FNIR(1600000, T, L+1) = 0.9987, FPIR=0.001000 vs. lowest 0.1733 from sensetime_005

Immigration visa-border ranking 95 (out of 139) -- FNIR(1600000, T, L+1) = 0.4442, FPIR=0.001000 vs. lowest 0.0059 from sensetime_004

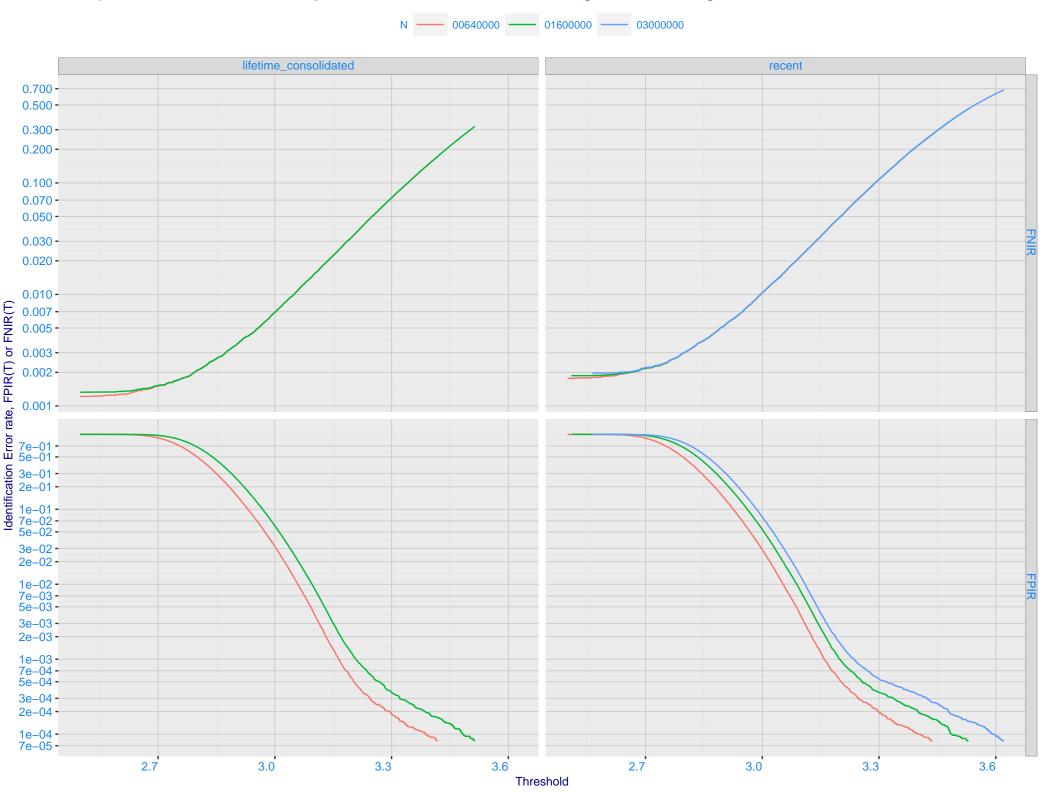
Immigration visa-kiosk ranking 75 (out of 134) -- FNIR(1600000, T, L+1) = 0.7416, FPIR=0.001000 vs. lowest 0.1048 from sensetime_005



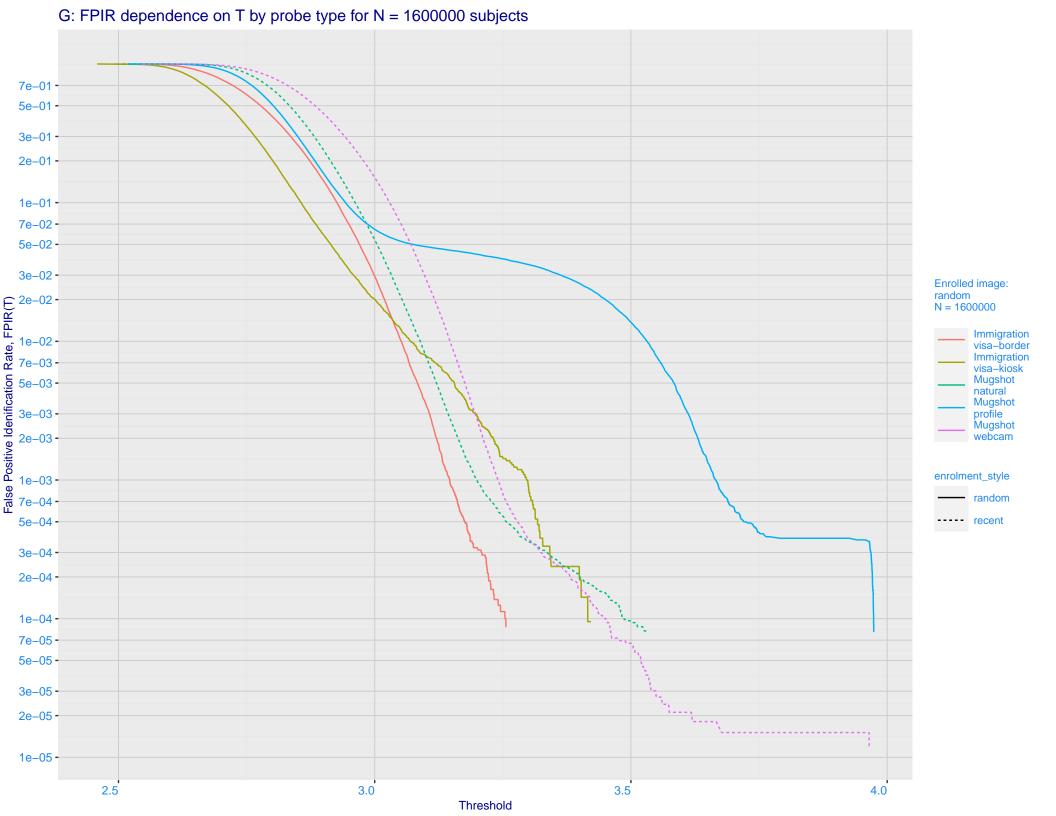
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.000 - 0.000 - 0.500 - 0.200 -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

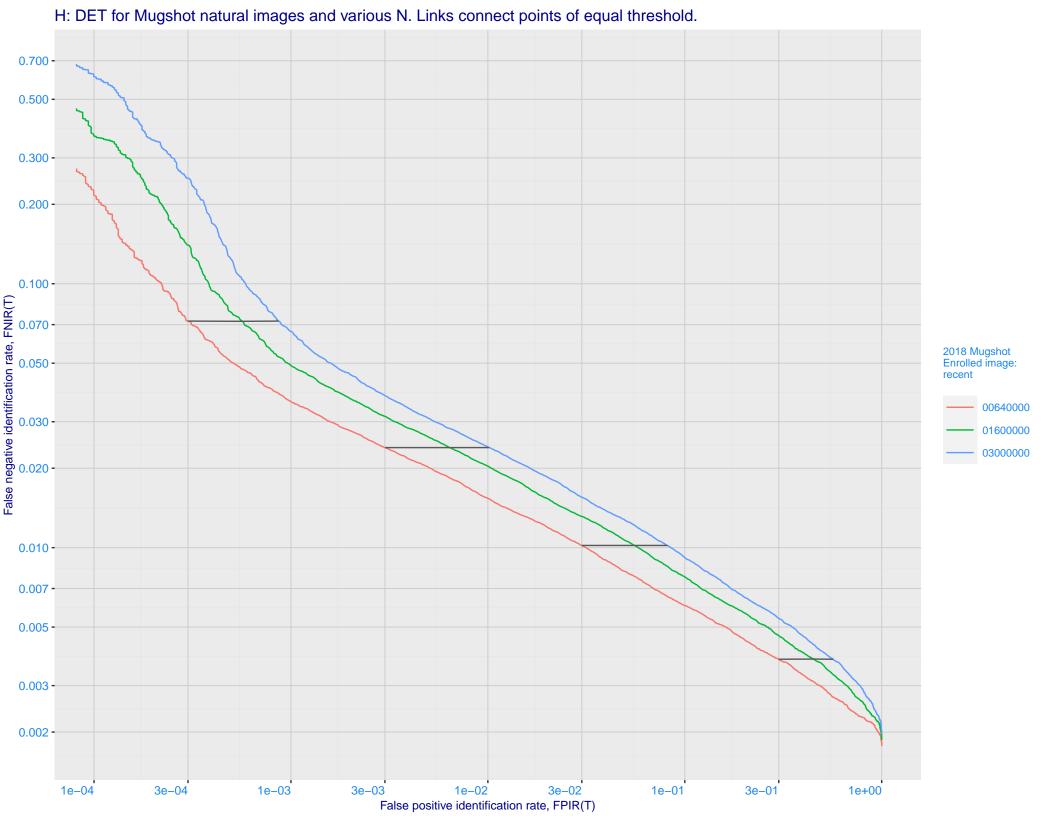
False positive identification rate, FPIR(T)

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 -3e-02 1e-05 3e-05 1e-04 3e-04 1e-03 3e-03 1e-02 1e-01 3e-01 False Positive Idenification Rate, FPIR(T)

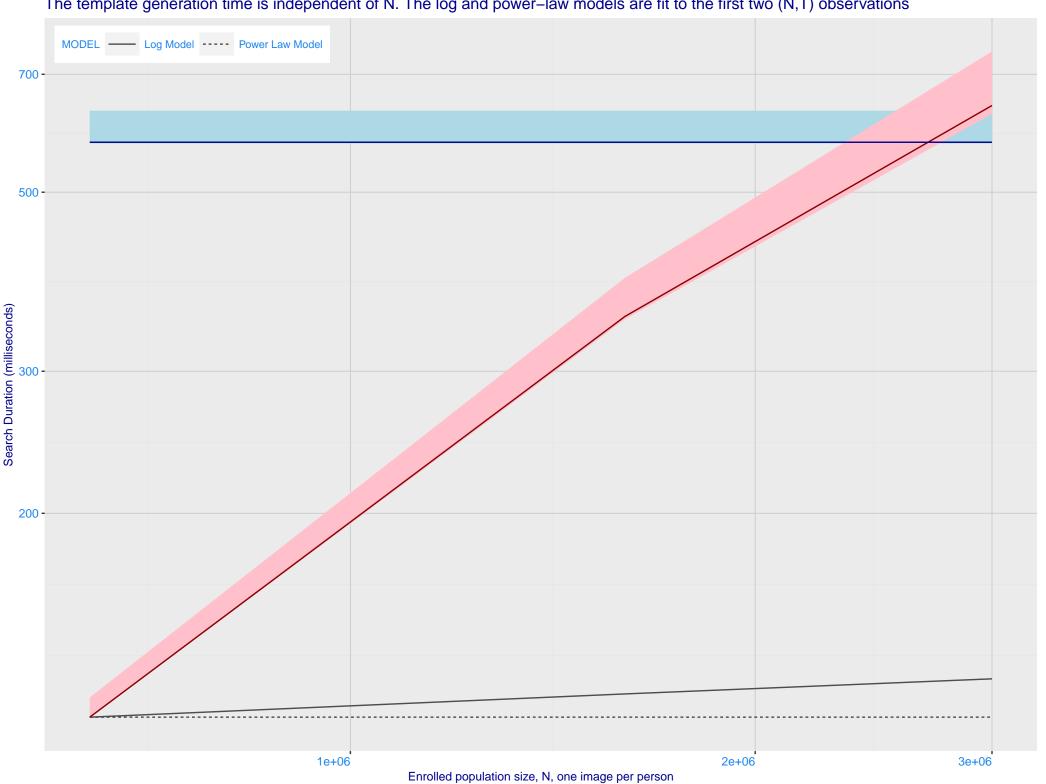




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Ealse negative identification rate, FNIR(N) 0.003 - 0.001 - 0.500 - 0.200 - 0.100 - 0. enrolment_style 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

J: 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 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



