A: Datasheet

Algorithm: visionlabs_6

Developer: VisionLabs

Submission Date: 2018_10_30

Template size: 512 bytes

Template time (2.5 percentile): 289 msec

Template time (median): 289 msec

Template time (97.5 percentile): 308 msec

Investigation:

Frontal mugshot ranking 22 (out of 259) -- FNIR(1600000, 0, 1) = 0.0018 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 40 (out of 221) -- FNIR(1600000, 0, 1) = 0.0150 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 18 (out of 190) -- FNIR(1600000, 0, 1) = 0.2114 vs. lowest 0.0591 from sensetime_005

Immigration visa-border ranking 21 (out of 142) -- FNIR(1600000, 0, 1) = 0.0038 vs. lowest 0.0014 from visionlabs_009

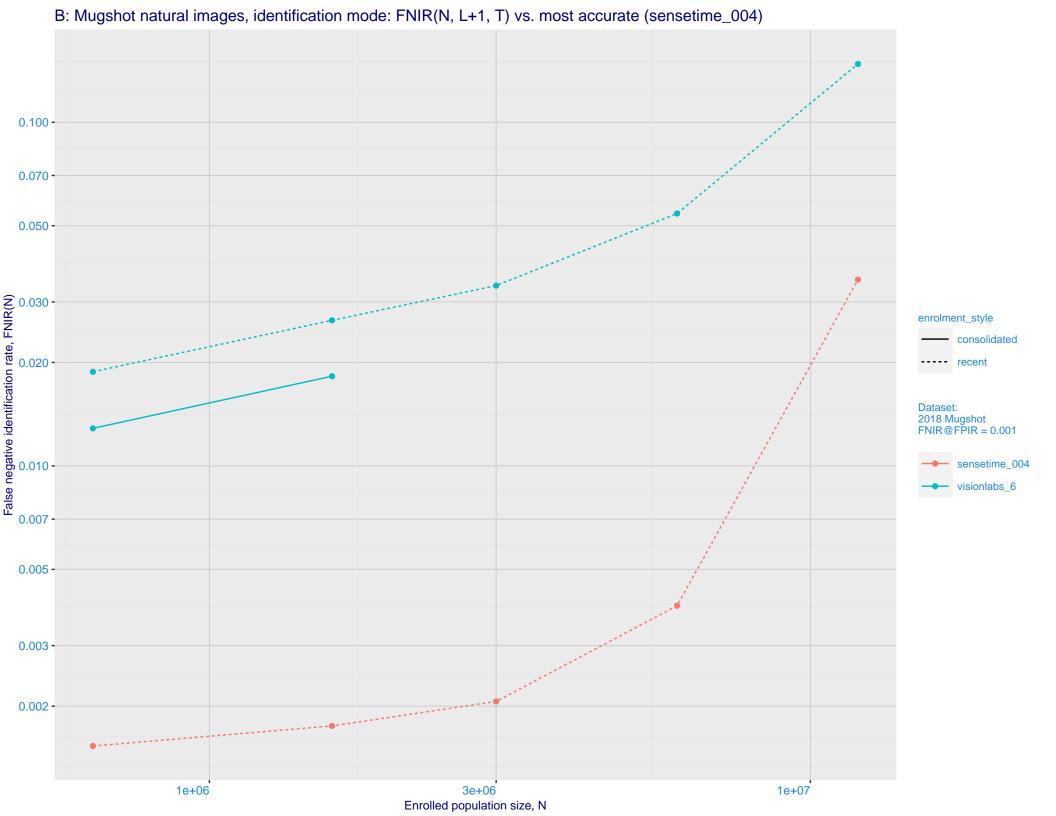
Immigration visa-kiosk ranking 18 (out of 139) -- FNIR(1600000, 0, 1) = 0.0957 vs. lowest 0.0694 from cib_000

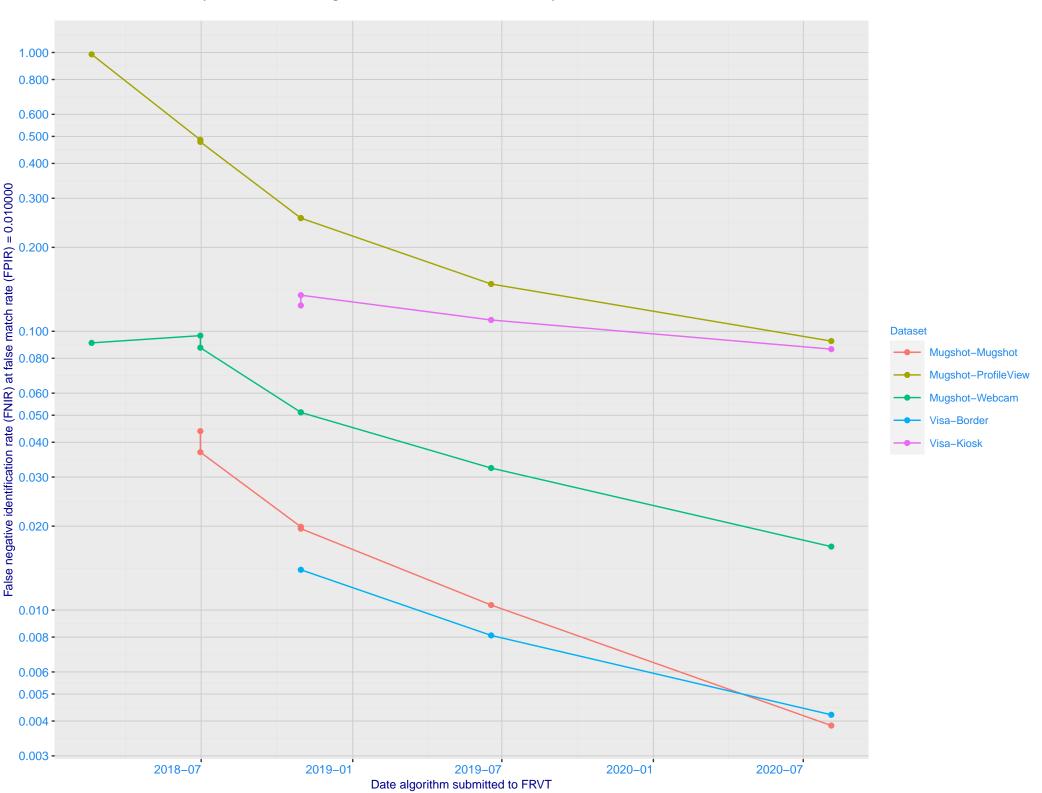
Identification:

Frontal mugshot ranking 46 (out of 259) -- FNIR(1600000, T, L+1) = 0.0265, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 49 (out of 219) -- FNIR(1600000, T, L+1) = 0.0902, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 12 (out of 189) -- FNIR(1600000, T, L+1) = 0.6723, FPIR=0.001000 vs. lowest 0.1733 from sensetime_005

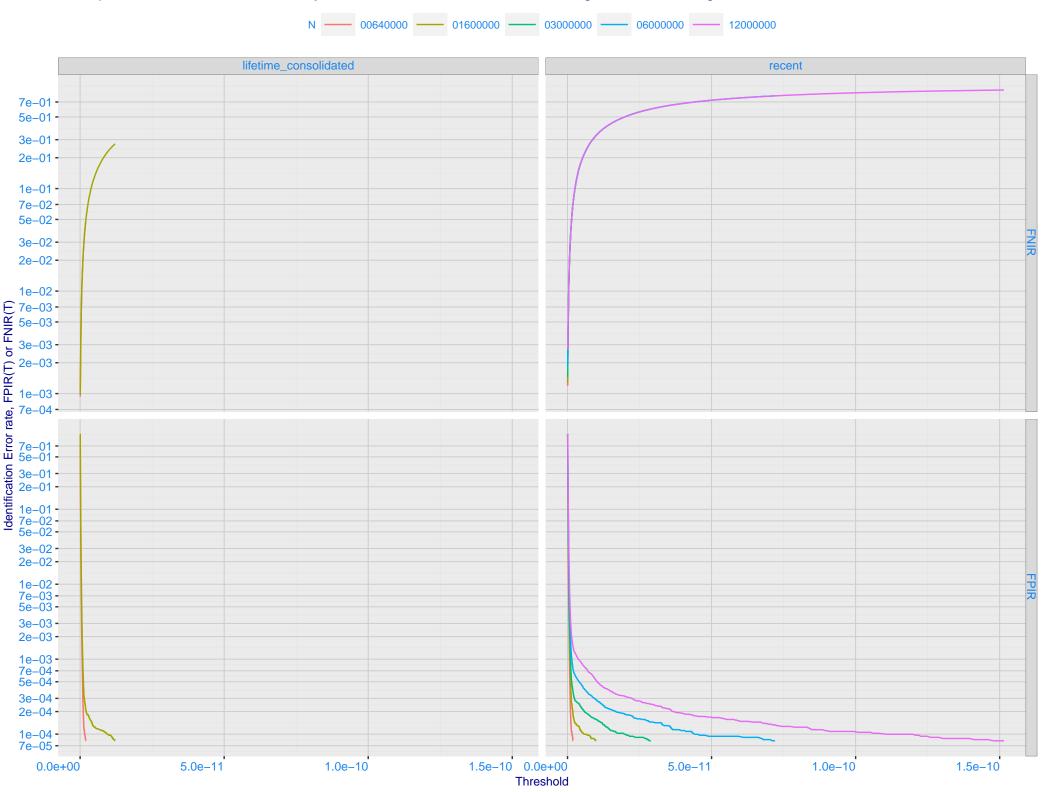




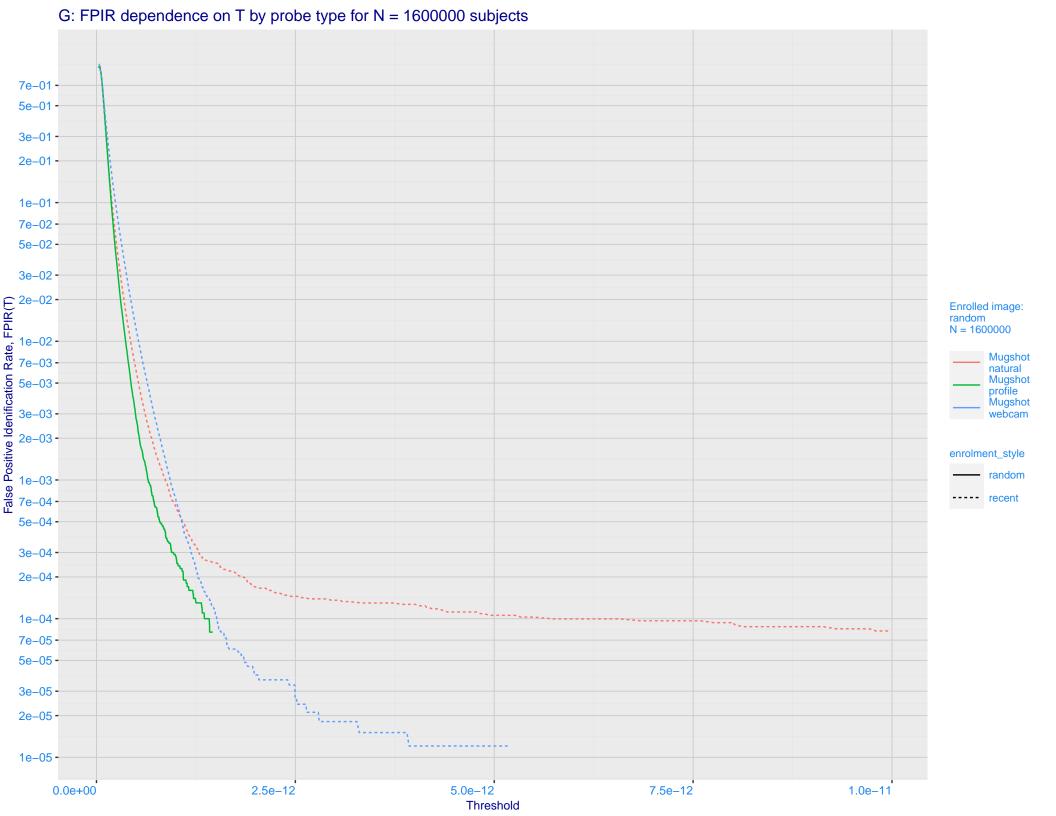
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration Immigration** Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.0001 - 0.700 - 0.500 - 0.200 - 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 -

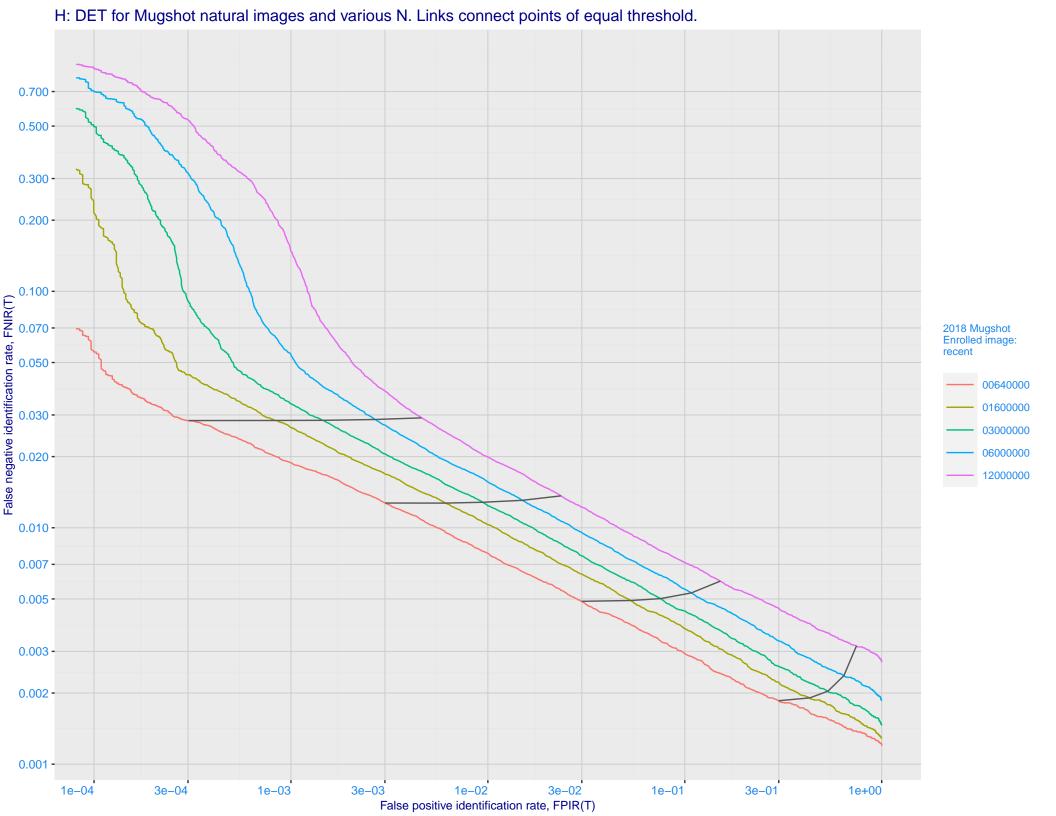
\\\ \e^{-0}\frac{3}{2}e^{-0}\frac{1}{2}e^{-0}\frac{3}{2}e^{-0}\frac{1}{2}e

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 0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -Ealse negative identification rate, FNIR(N) 0.002 - 0.001 - 0.000 - 0. enrolment_style consolidated ---- random --- recent Mugshot webcam Mugshot natural FNIR@Rank = 1 sensetime_005 visionlabs_6 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 sensetime_005 visionlabs_6 0.100 -0.070 -0.050 -0.030 -0.020 - 0.000 enrolment_style 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 Log Model ---- Power Law Model 300 -200 -100 -70 -50 -30 -20 -1e+06 3e+06 1e+07

Enrolled population size, N, one image per person

Search Duration (milliseconds)

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

