A: Datasheet

Algorithm: alchera_0

Developer: Alchera Inc

Submission Date: 2018_06_30

Template size: 2048 bytes

Template time (2.5 percentile): 253 msec

Template time (median): 260 msec

Template time (97.5 percentile): 289 msec

Investigation:

Frontal mugshot ranking 165 (out of 279) -- FNIR(1600000, 0, 1) = 0.0161 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 157 (out of 241) -- FNIR(1600000, 0, 1) = 0.0467 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 122 (out of 210) — FNIR(1600000, 0, 1) = 0.8704 vs. lowest 0.0587 from xforwardai_002

Immigration visa-border ranking 106 (out of 168) -- FNIR(1600000, 0, 1) = 0.0464 vs. lowest 0.0013 from visionlabs_010

Immigration visa-kiosk ranking 116 (out of 165) -- FNIR(1600000, 0, 1) = 0.2923 vs. lowest 0.0568 from cloudwalk_hr_000

Identification:

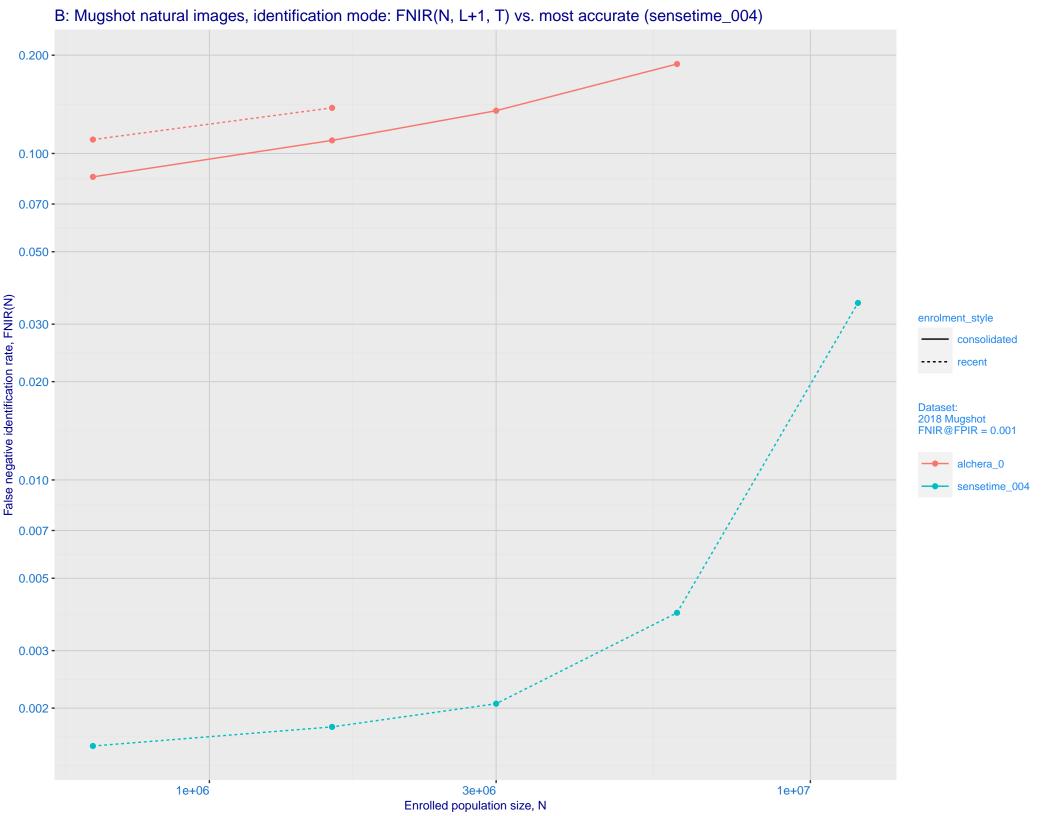
Frontal mugshot ranking 166 (out of 279) -- FNIR(1600000, T, L+1) = 0.1380, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

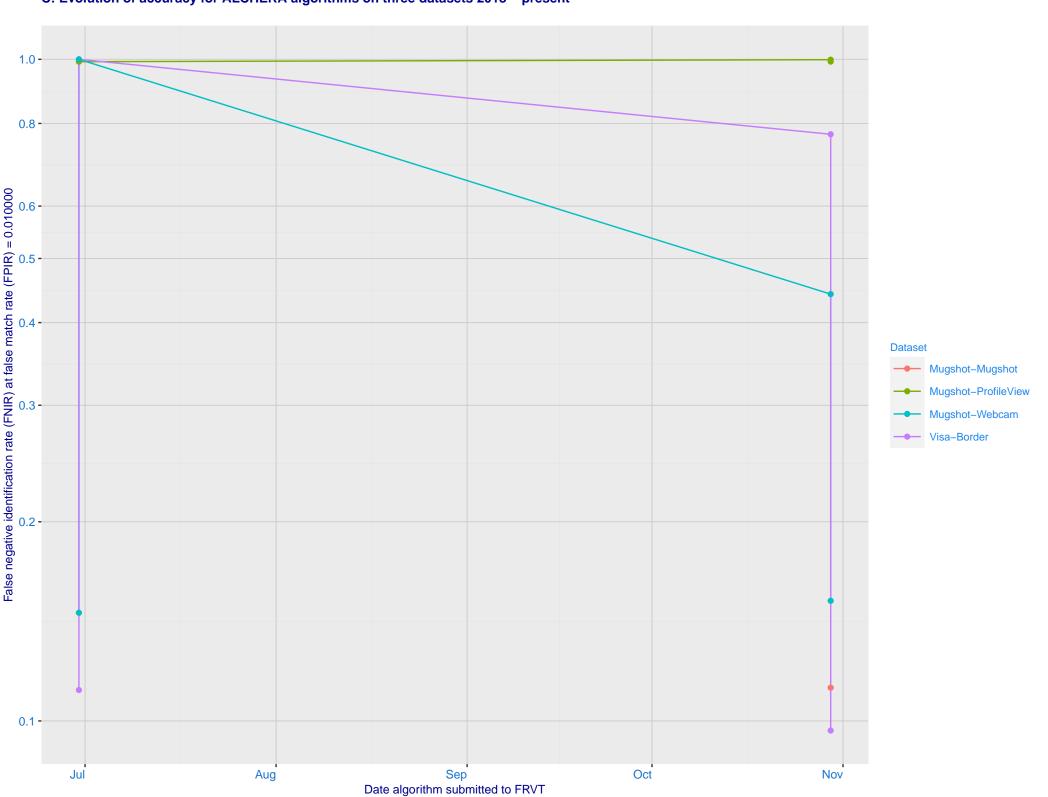
Mugshot webcam ranking 140 (out of 236) -- FNIR(1600000, T, L+1) = 0.2164, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 133 (out of 209) -- FNIR(1600000, T, L+1) = 0.9986, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000

Immigration visa-border ranking 99 (out of 167) -- FNIR(1600000, T, L+1) = 0.1766, FPIR=0.001000 vs. lowest 0.0047 from idemia_008

Immigration visa-kiosk ranking 100 (out of 162) — FNIR(1600000, T, L+1) = 0.8038, FPIR=0.001000 vs. lowest 0.0996 from cloudwalk_hr_000

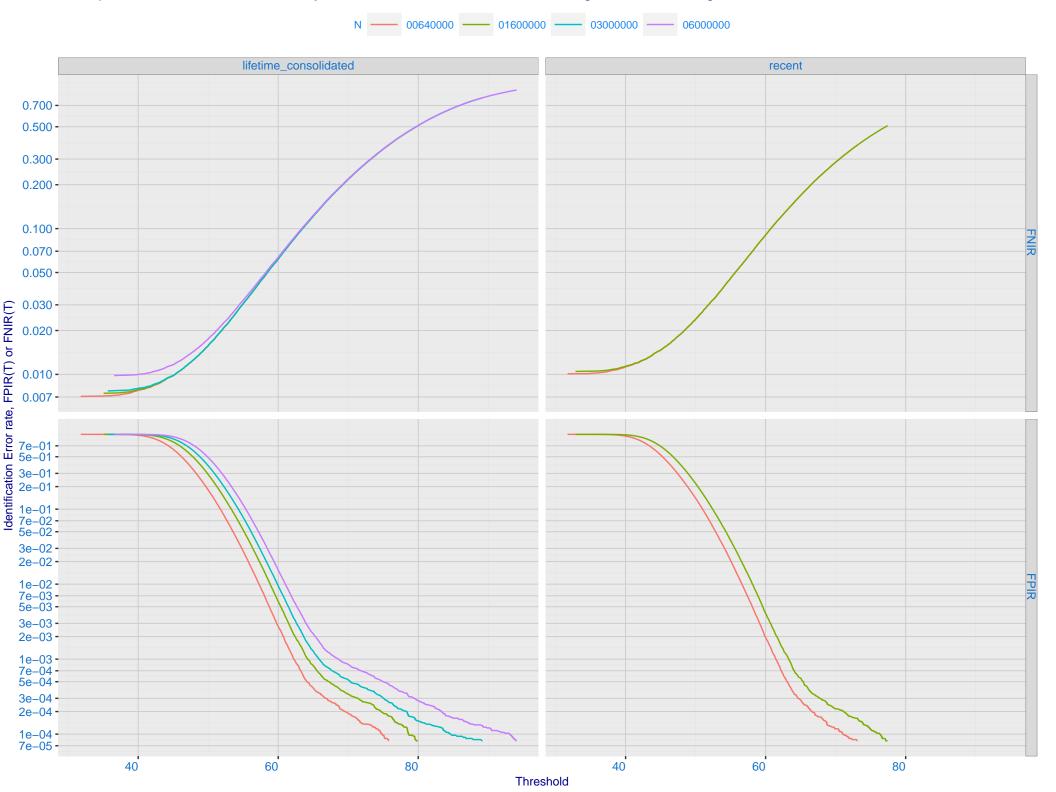




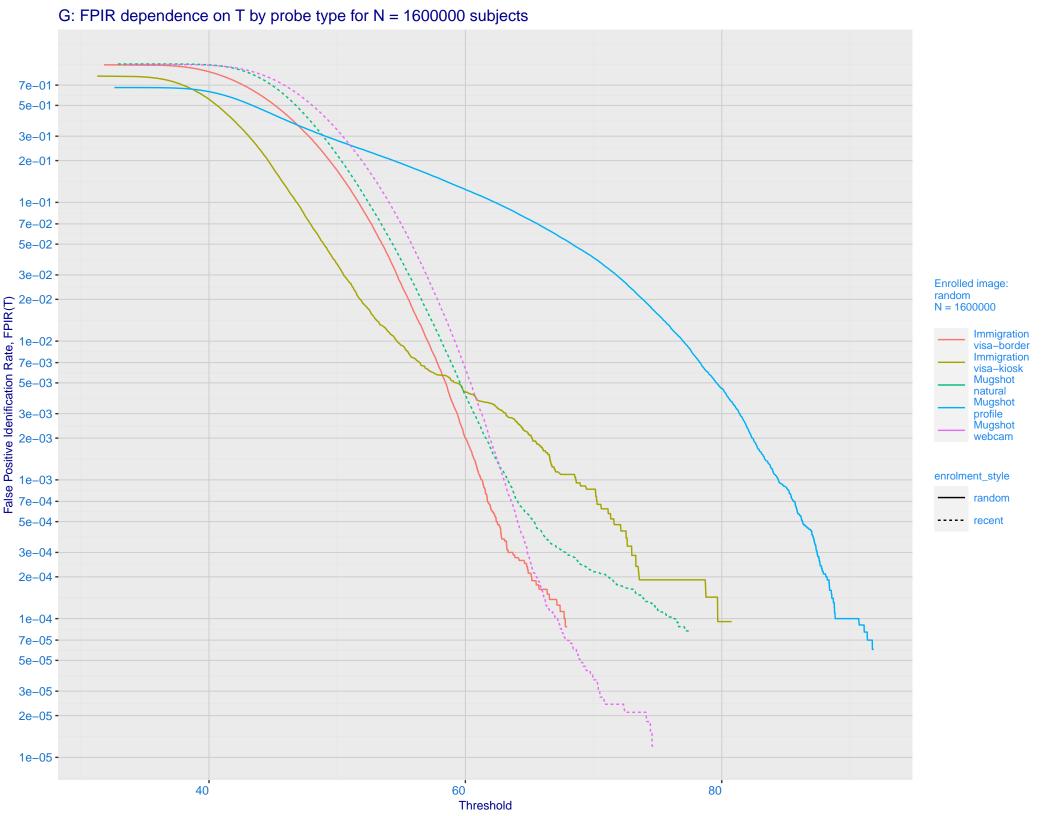
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration** Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 - 0.005 - 0.005 - 0.002 - 0.001 - 0.001 - 0.700 - 0.500 - 0.200 enrolment_style 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 -

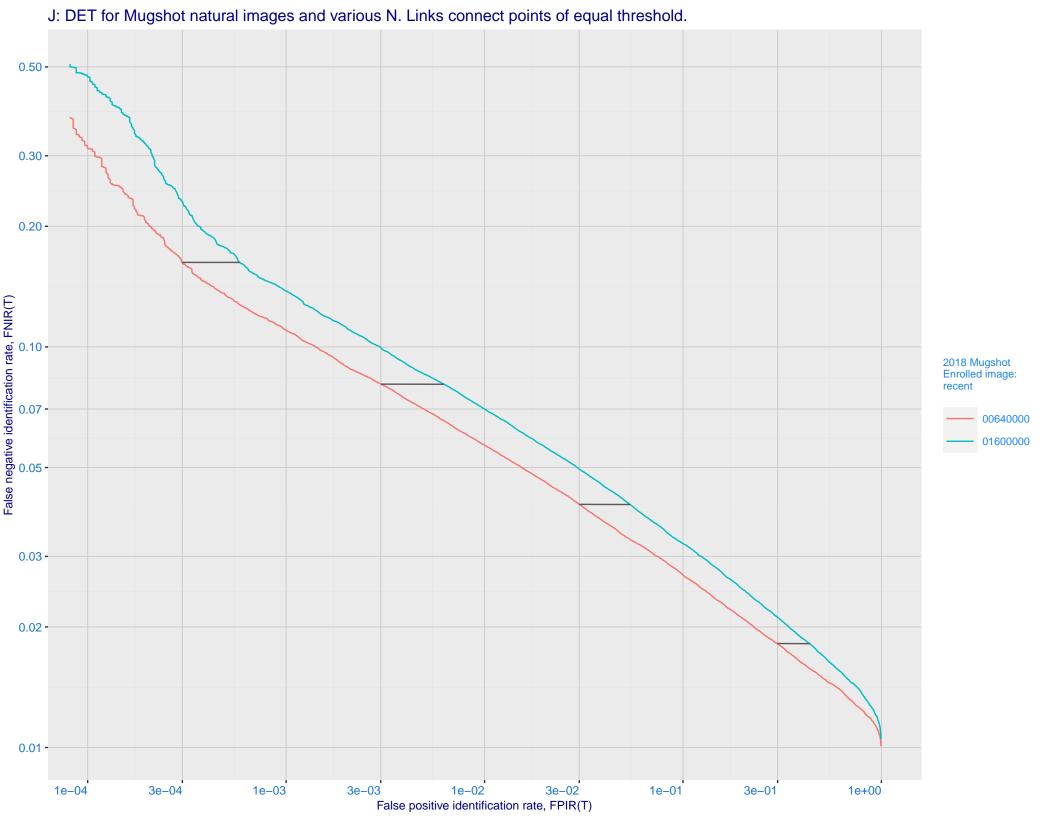
False positive identification rate, FPIR(T)

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 -Selectivity. SEL(T) 5e-02 - 5e-02 - 5e-02 - 1e-02 - 1 **Enrolled images:** recent N = 1600000 Mugshot natural Mugshot webcam 1e-02 -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)

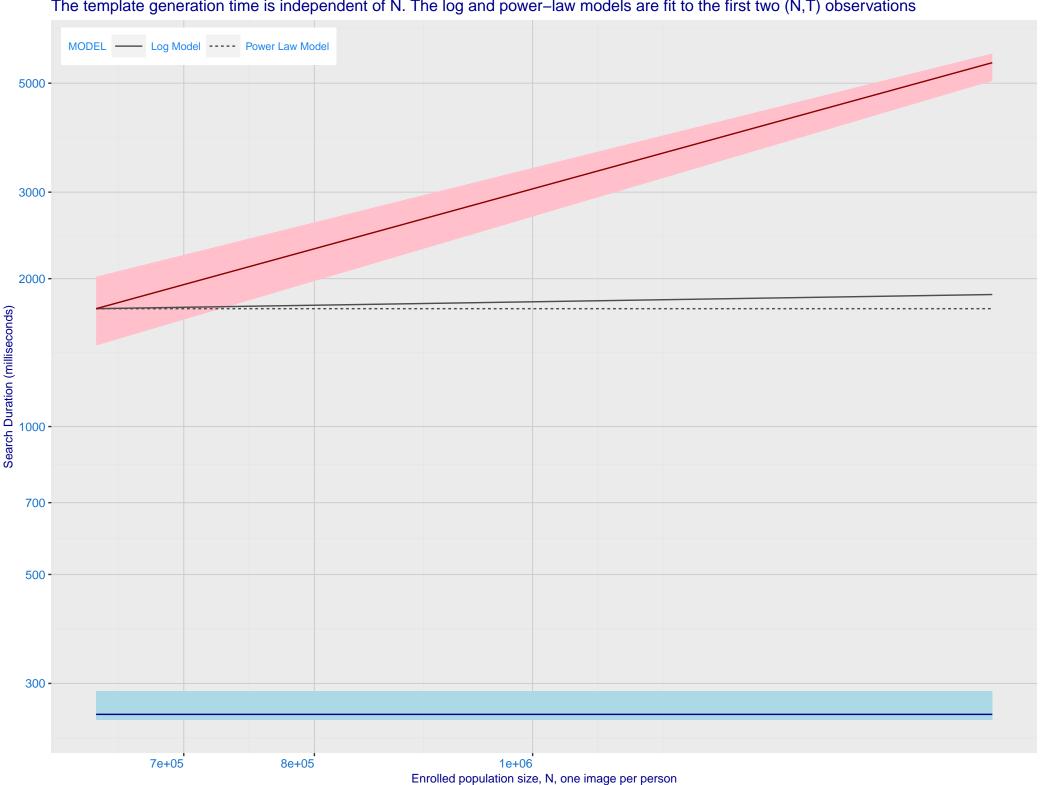




K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Ealse negative identification rate, FNIR(N) 0.003 - 0.001 - 0.300 - 0.200 - 0.100 - 0.070 - 0. enrolment_style consolidated ---- random --- recent Mugshot Mugshot webcam natural FNIR@Rank = 1 alchera_0 sensetime_005 0.050 -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

L: Investigational mode: FNIR(1600000, R, 0) by probe type alchera_0 sensetime_005 0.300 -0.200 -0.100 -0.070 -0.050 enrolment_style False negative identification rate, FNIR(N) 0.030 - 0.000 - 0. 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



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



