A: Datasheet

Algorithm: acer_000

Developer: Acer Incorporated

Submission Date: 2020_08_12

Template size: 512 bytes

Template time (2.5 percentile): 198 msec

Template time (median): 199 msec

Template time (97.5 percentile): 215 msec

Investigation:

Frontal mugshot ranking 144 (out of 279) -- FNIR(1600000, 0, 1) = 0.0106 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 133 (out of 241) -- FNIR(1600000, 0, 1) = 0.0359 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 114 (out of 210) — FNIR(1600000, 0, 1) = 0.8265 vs. lowest 0.0587 from xforwardai_002

Immigration visa-border ranking 93 (out of 168) — FNIR(1600000, 0, 1) = 0.0255 vs. lowest 0.0013 from visionlabs_010

Immigration visa-kiosk ranking 94 (out of 165) -- FNIR(1600000, 0, 1) = 0.2094 vs. lowest 0.0568 from cloudwalk_hr_000

Identification:

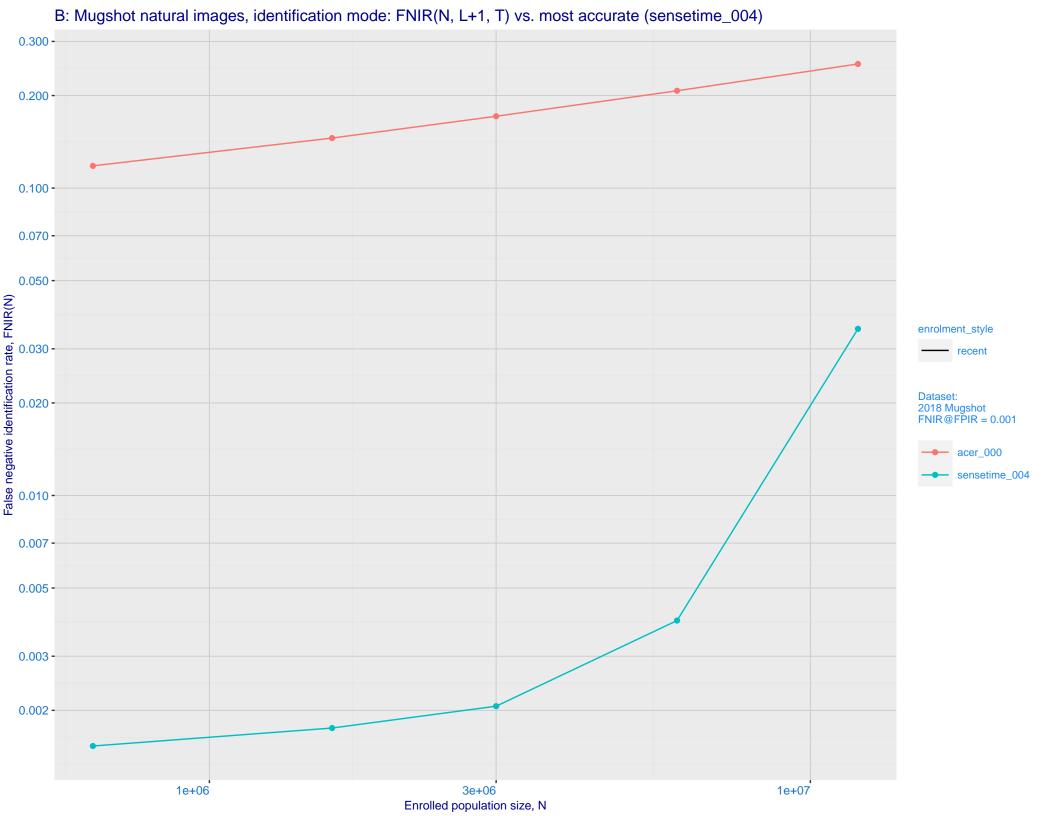
Frontal mugshot ranking 169 (out of 279) -- FNIR(1600000, T, L+1) = 0.1455, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 153 (out of 236) -- FNIR(1600000, T, L+1) = 0.2460, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

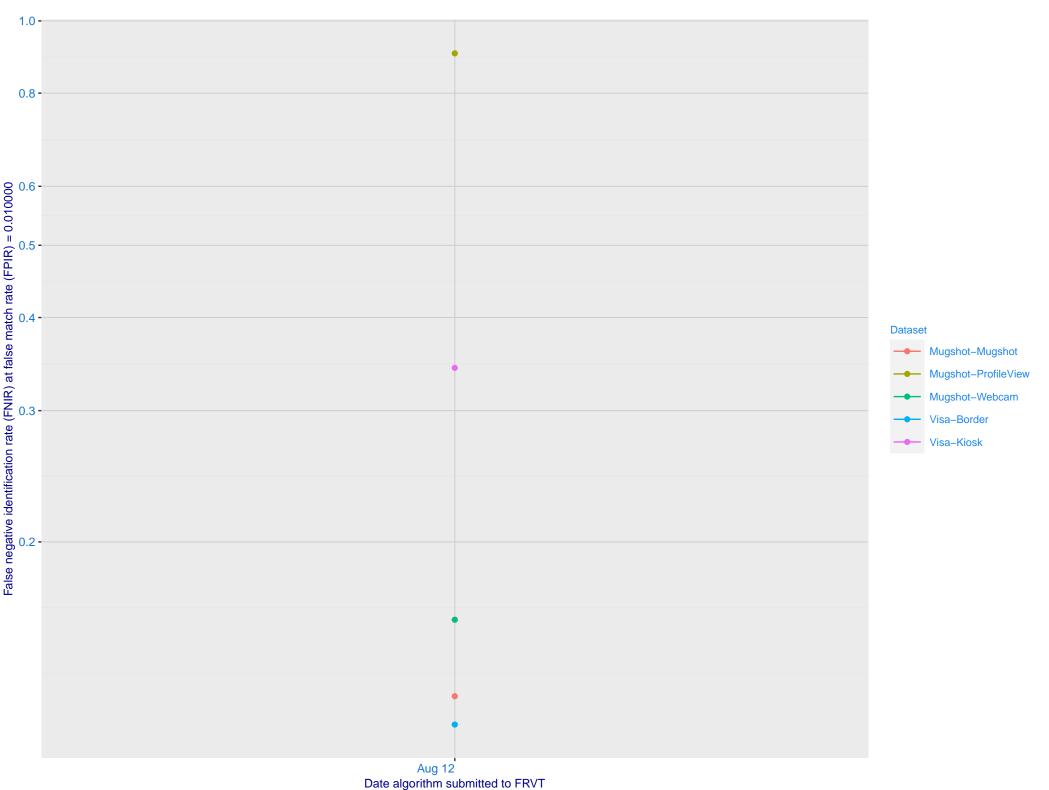
Mugshot profile ranking 66 (out of 209) -- FNIR(1600000, T, L+1) = 0.9809, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000

Immigration visa-border ranking 102 (out of 167) -- FNIR(1600000, T, L+1) = 0.2006, FPIR=0.001000 vs. lowest 0.0047 from idemia_008

Immigration visa-kiosk ranking 73 (out of 162) — FNIR(1600000, T, L+1) = 0.4936, FPIR=0.001000 vs. lowest 0.0996 from cloudwalk_hr_000



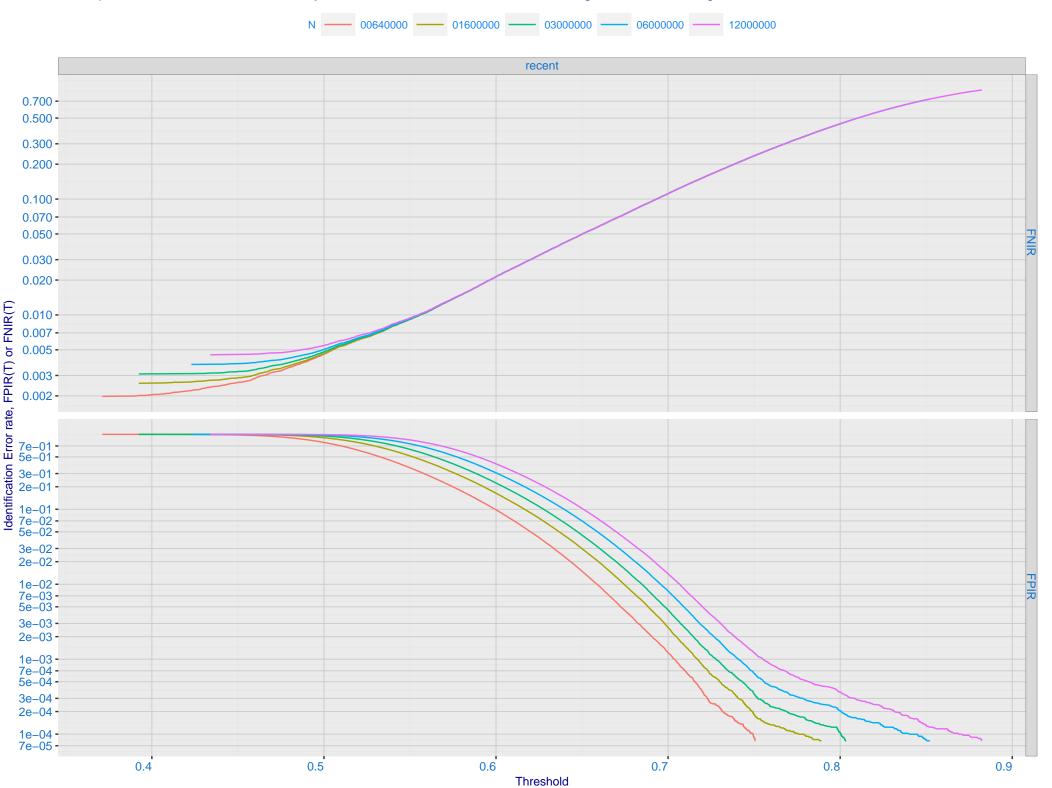
C: Evolution of accuracy for ACER algorithms on three datasets 2018 – present



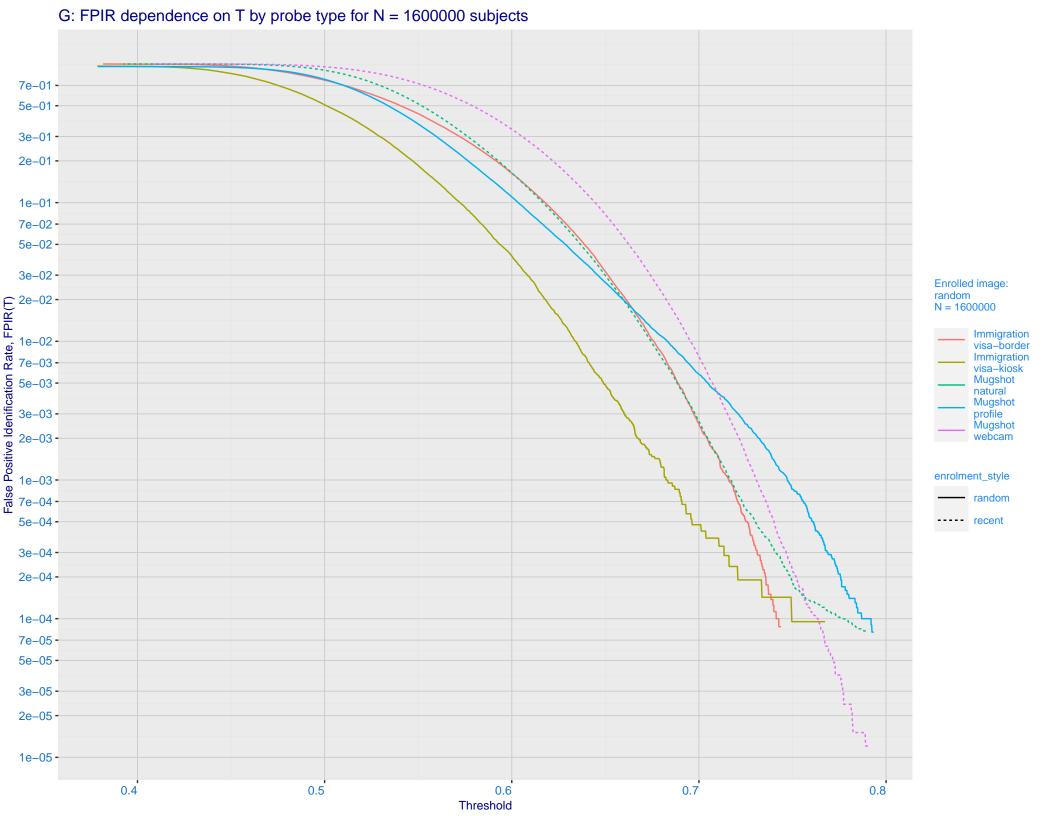
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.000 - 0.000 - 0.500 - 0.200 -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

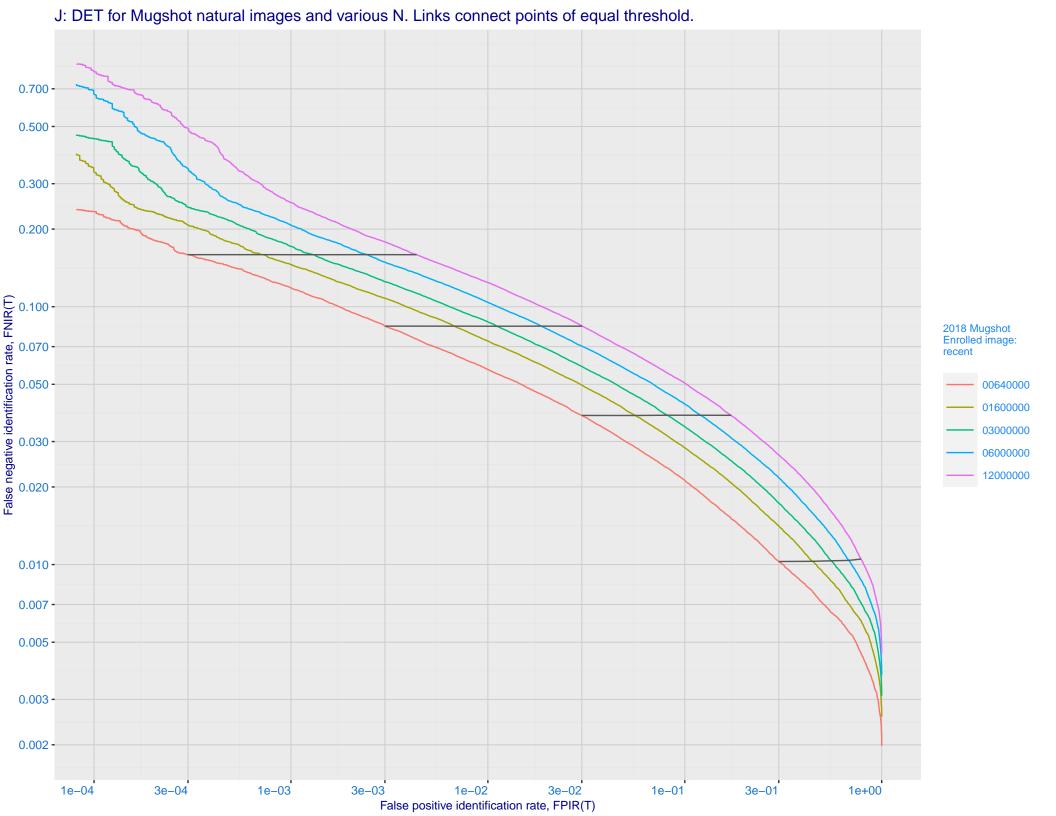
False positive identification rate, FPIR(T)

E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images

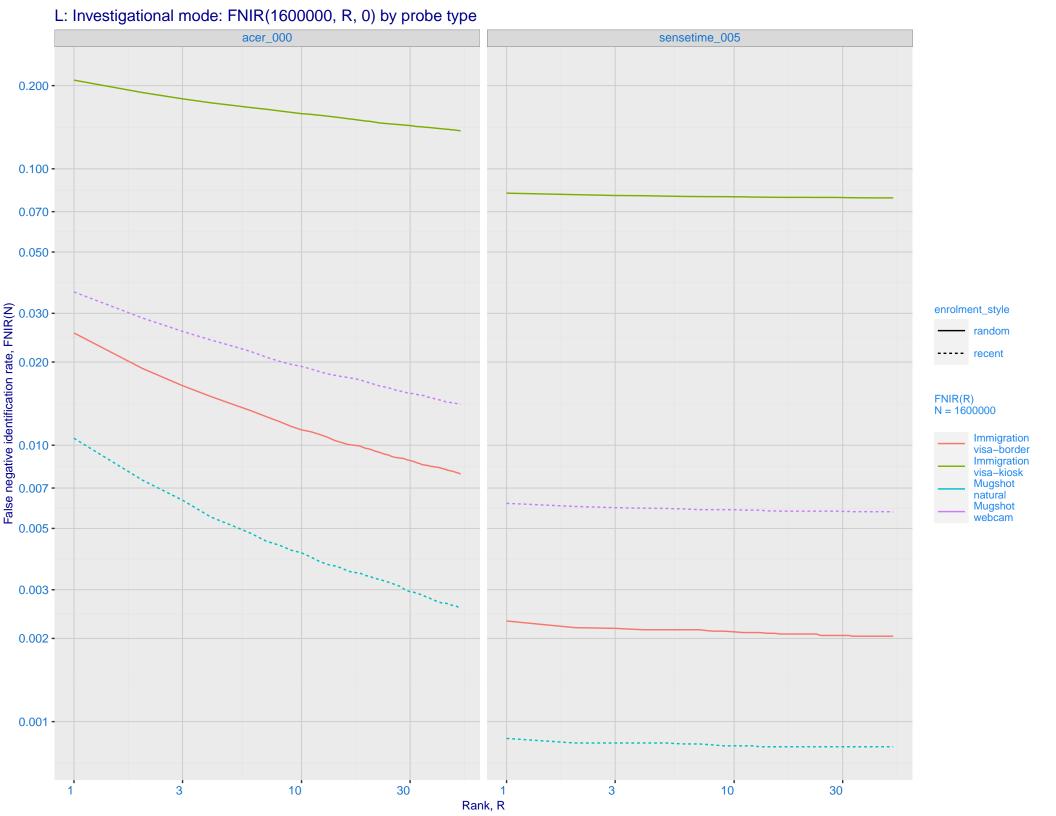


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -7e-02 -5e-02 -5e-02 -3e-02 -1e-02 -**Enrolled images:** recent N = 1600000 Mugshot natural Mugshot webcam 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)

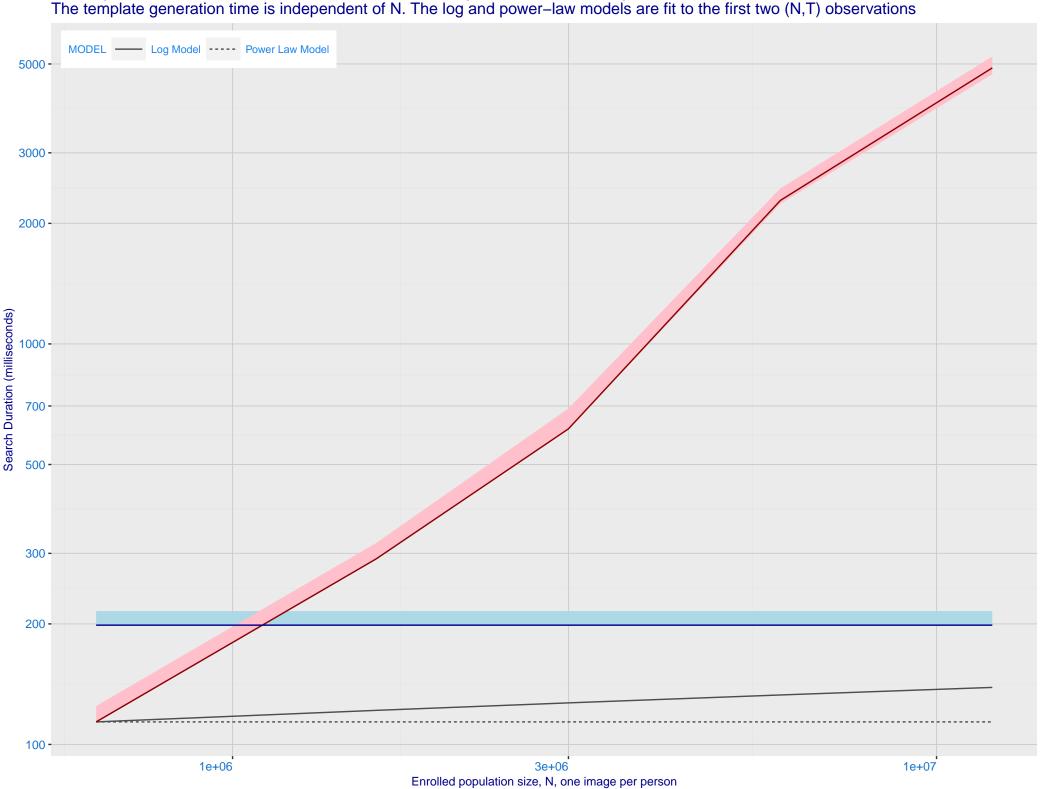




K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Ealse negative identification rate, FNIR(N) 0.003 - 0.001 - 0.200 - 0.100 - 0.070 - 0. enrolment_style - random ---- recent Mugshot webcam Mugshot natural FNIR@Rank = 1 -- acer_000 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



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



