A: Datasheet

Algorithm: vigilantsolutions_4

Developer: Vigilant Solutions

Submission Date: 2018_06_21

Template size: 1544 bytes

Template time (2.5 percentile): 807 msec

Template time (median): 812 msec

Template time (97.5 percentile): 888 msec

Investigation:

Frontal mugshot ranking 233 (out of 279) -- FNIR(1600000, 0, 1) = 0.1249 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 210 (out of 241) -- FNIR(1600000, 0, 1) = 0.2444 vs. lowest 0.0062 from sensetime_005

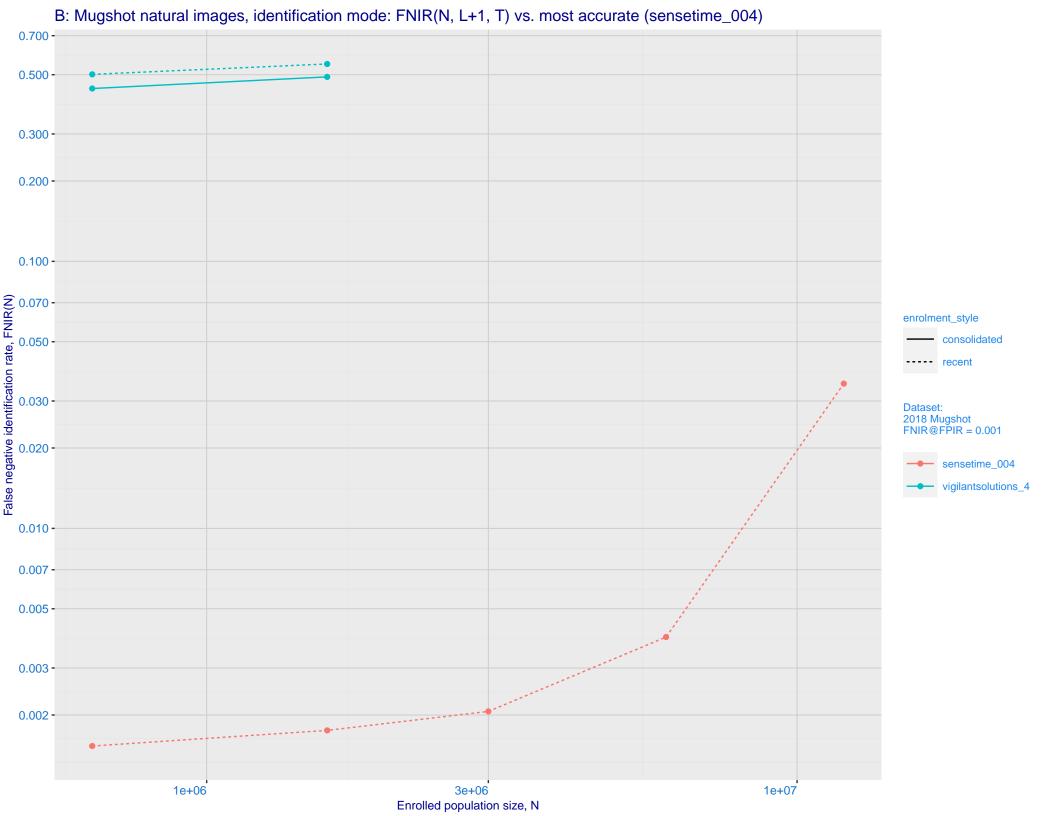
Mugshot profile ranking 172 (out of 210) -- FNIR(1600000, 0, 1) = 0.9652 vs. lowest 0.0587 from xforwardai_002

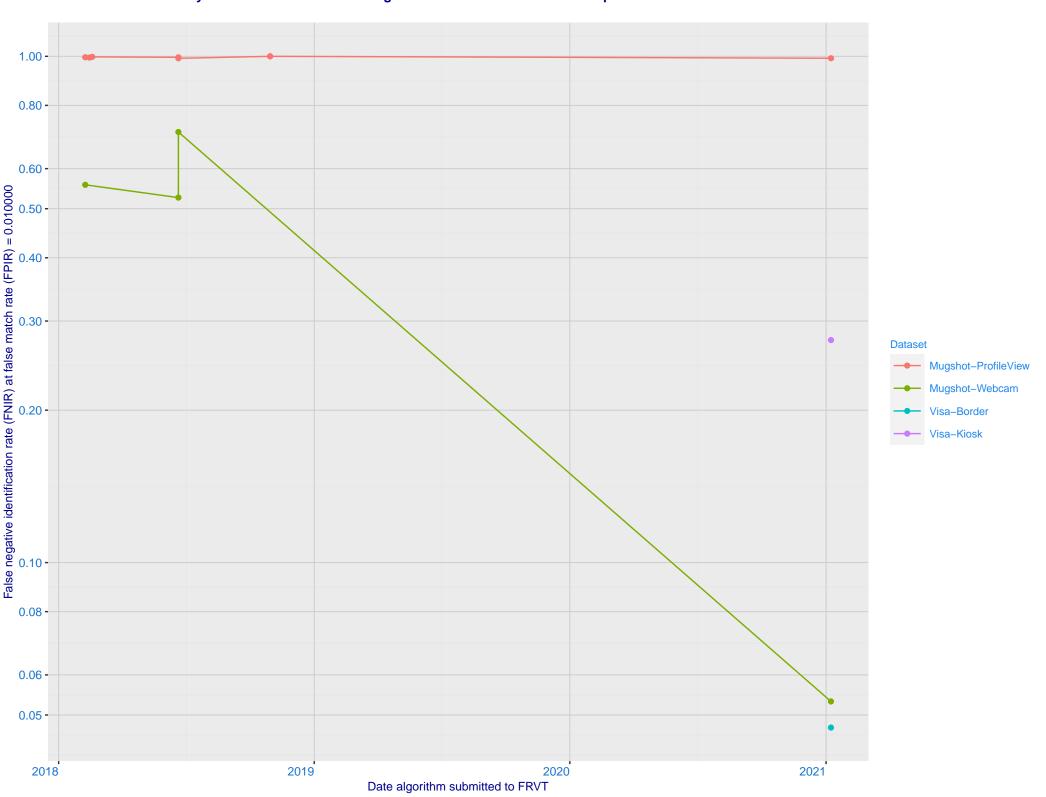
Identification:

Frontal mugshot ranking 237 (out of 279) -- FNIR(1600000, T, L+1) = 0.5485, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 215 (out of 236) -- FNIR(1600000, T, L+1) = 0.8169, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 114 (out of 209) -- FNIR(1600000, T, L+1) = 0.9958, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000

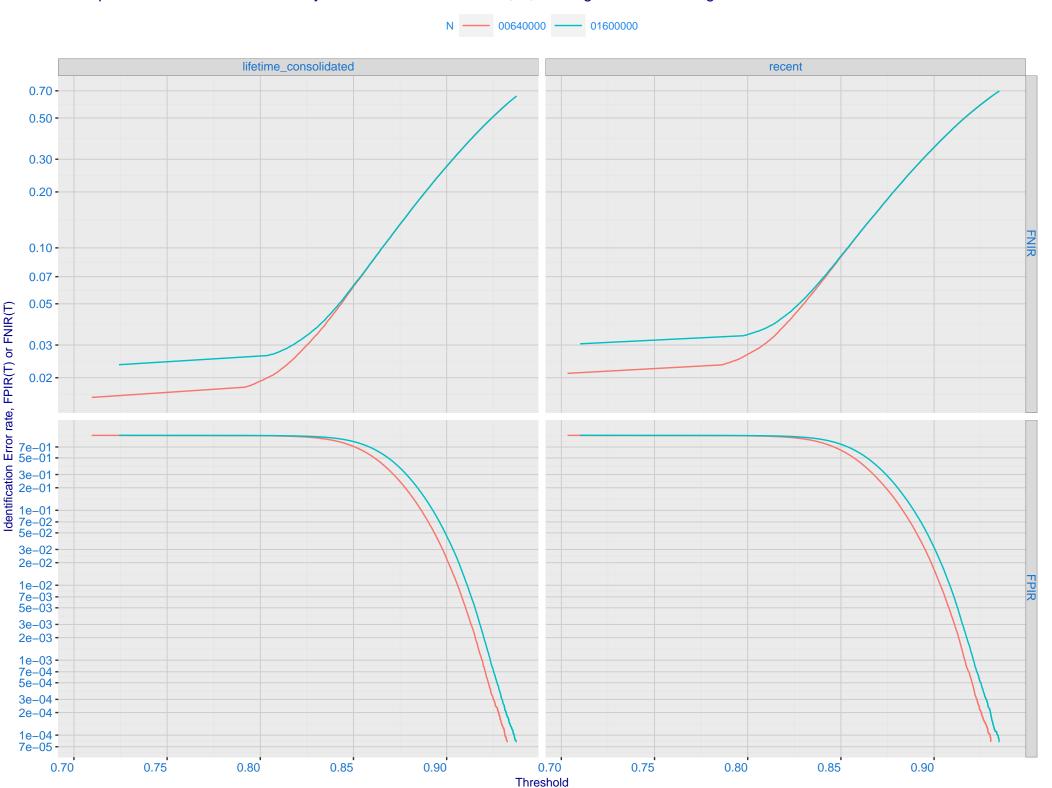




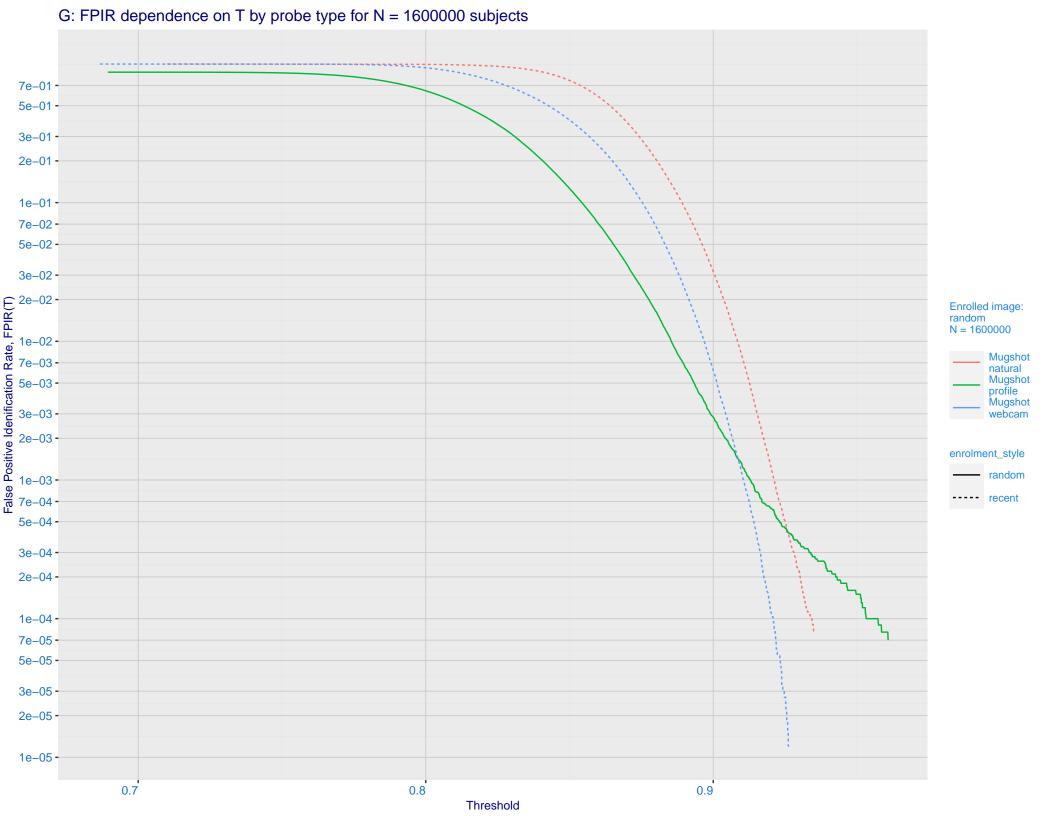
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.002 - 0.000 - 0.500 - 0.200 - 0.200 - 0.000 - 0. enrolment_style consolidated-ONE-MATE random-ONE-MATE recent-ONE-MATE 0.100 -0.070 vigilantsolutions 0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -

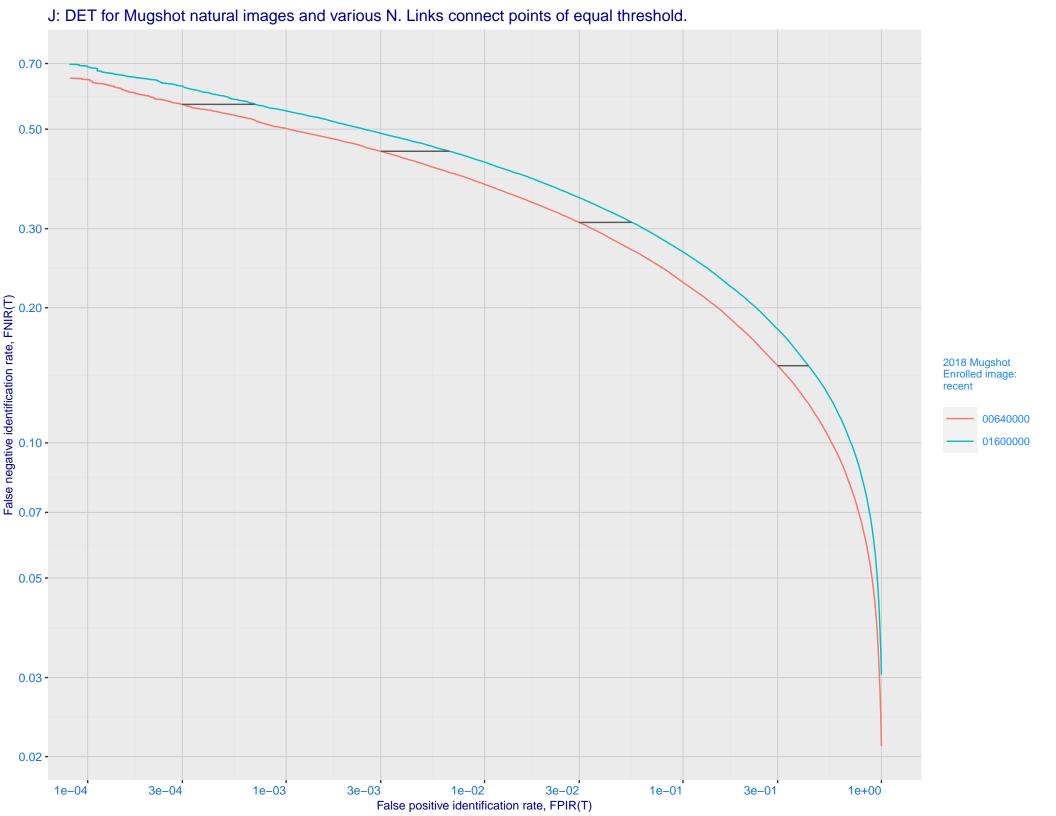
False positive identification rate, FPIR(T)

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

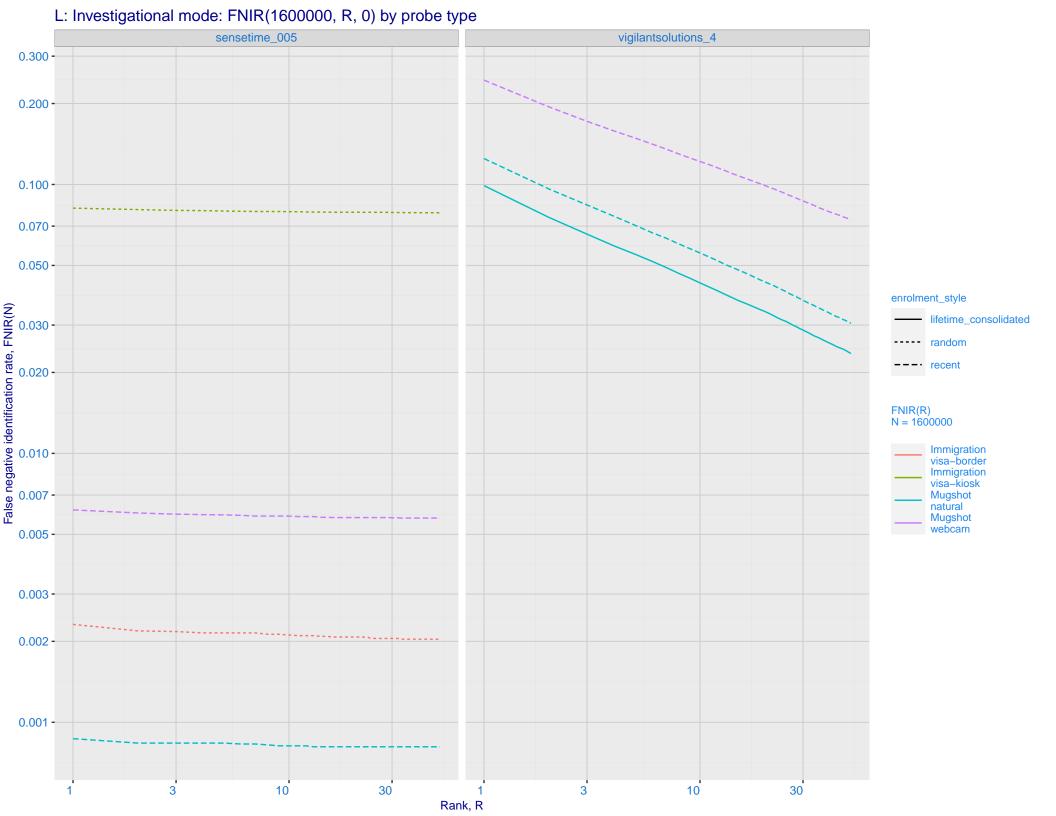


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -7e-02 -5e-02 -3e-02 -3e-02 -1e-02 -**Enrolled images:** recent N = 1600000 Mugshot natural Mugshot webcam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

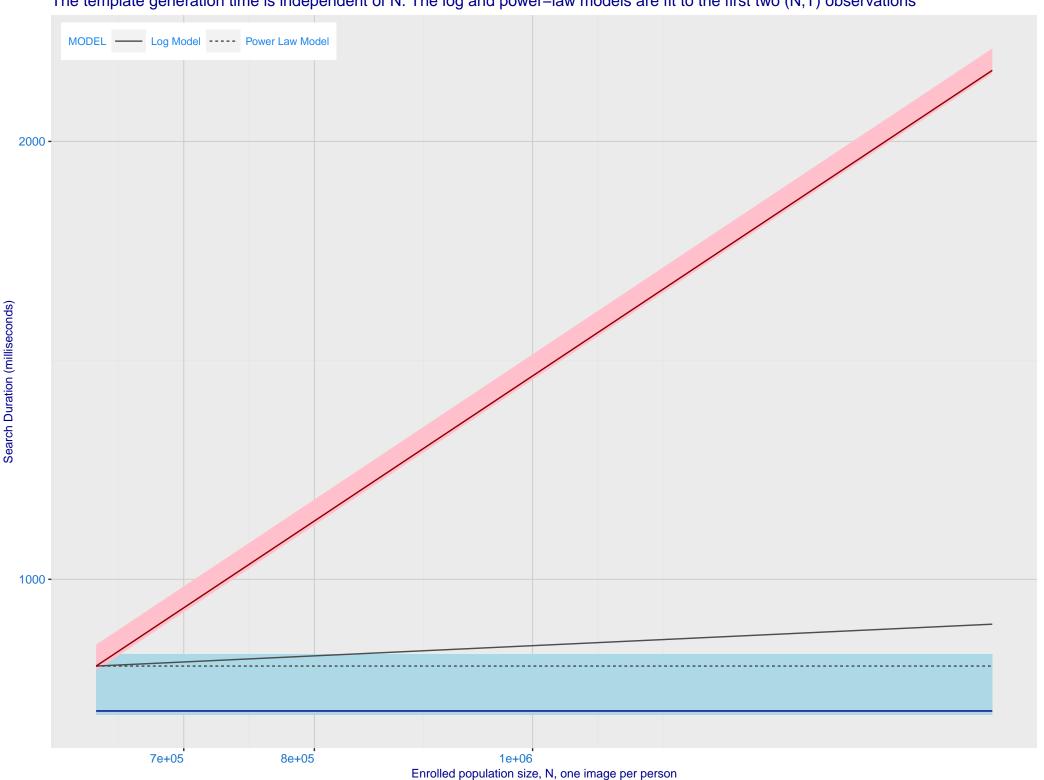




K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Palse negative identification rate, FNIR(N) 0.002 - 0.001 - 0.300 - 0.100 - 0.070 - 0. FNIR@Rank = 1 sensetime_005 vigilantsolutions_4 Mugshot natural Mugshot webcam enrolment_style consolidated ---- random --- recent 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



