A: Datasheet

Algorithm: vigilantsolutions_6

Developer: Vigilant Solutions

Submission Date: 2018_10_30

Template size: 1544 bytes

Template time (2.5 percentile): 810 msec

Template time (median): 817 msec

Template time (97.5 percentile): 892 msec

Investigation:

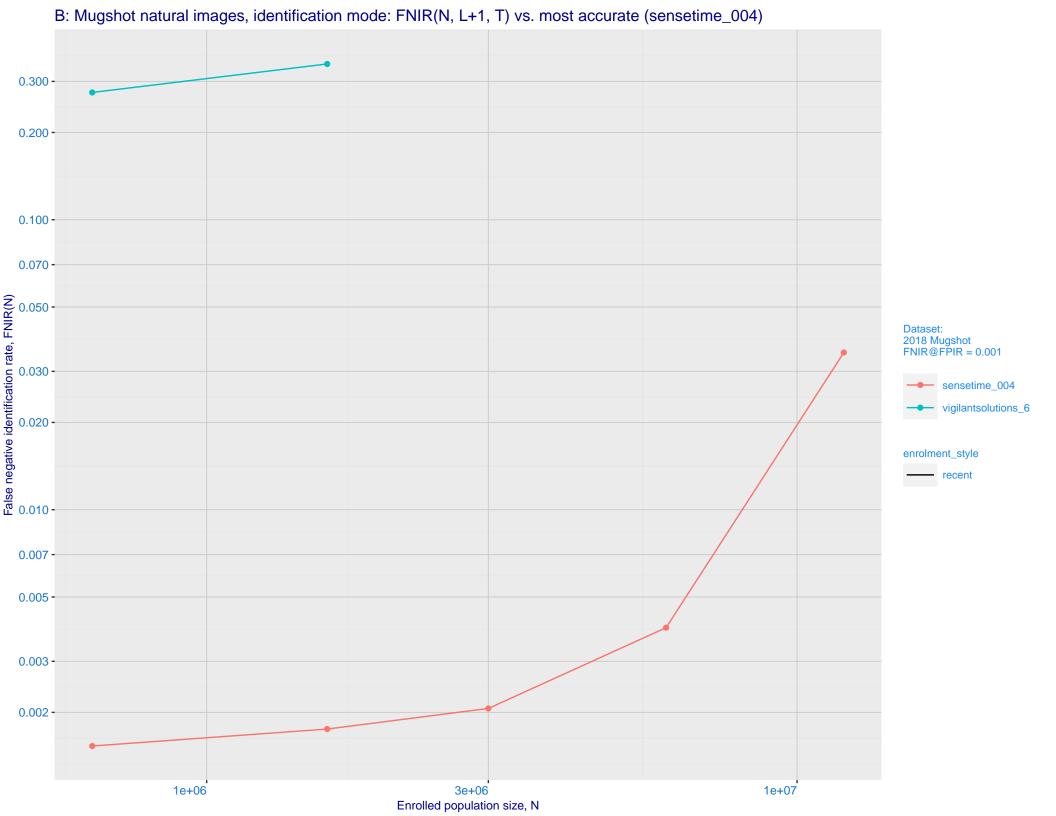
Frontal mugshot ranking 139 (out of 279) -- FNIR(1600000, 0, 1) = 0.0099 vs. lowest 0.0009 from sensetime_005

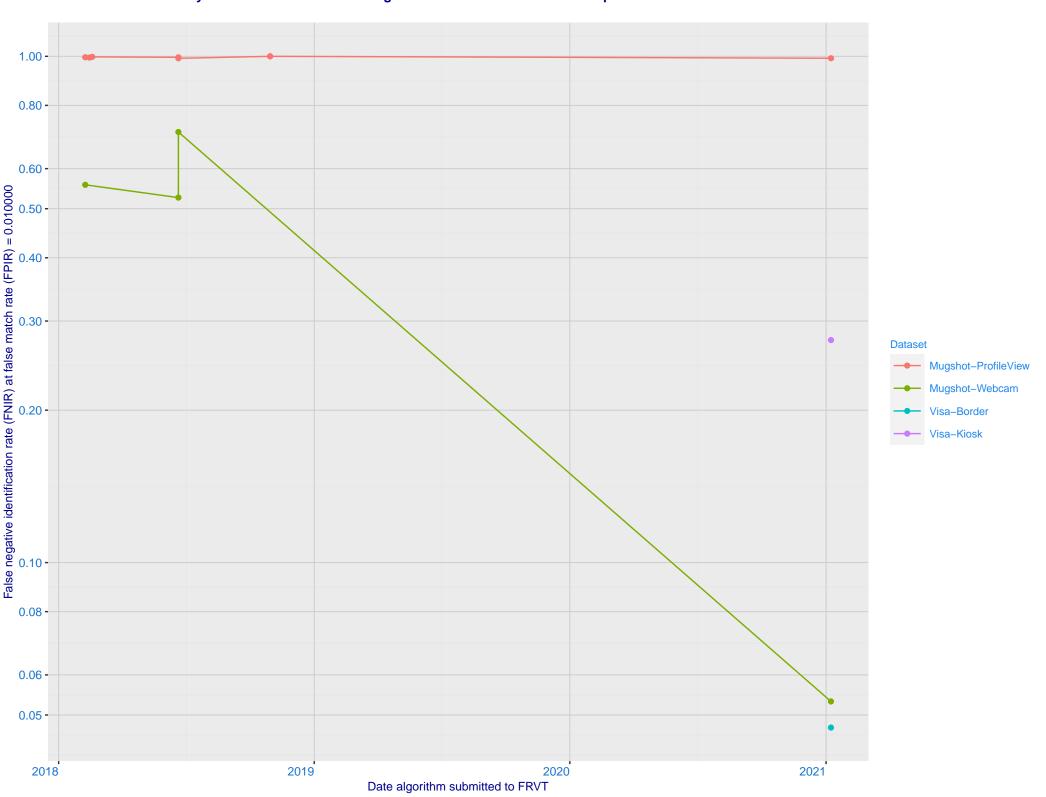
Mugshot profile ranking 130 (out of 210) -- FNIR(1600000, 0, 1) = 0.9206 vs. lowest 0.0587 from xforwardai_002

Identification:

Frontal mugshot ranking 212 (out of 279) -- FNIR(1600000, T, L+1) = 0.3446, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot profile ranking 187 (out of 209) -- FNIR(1600000, T, L+1) = 0.9999, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000



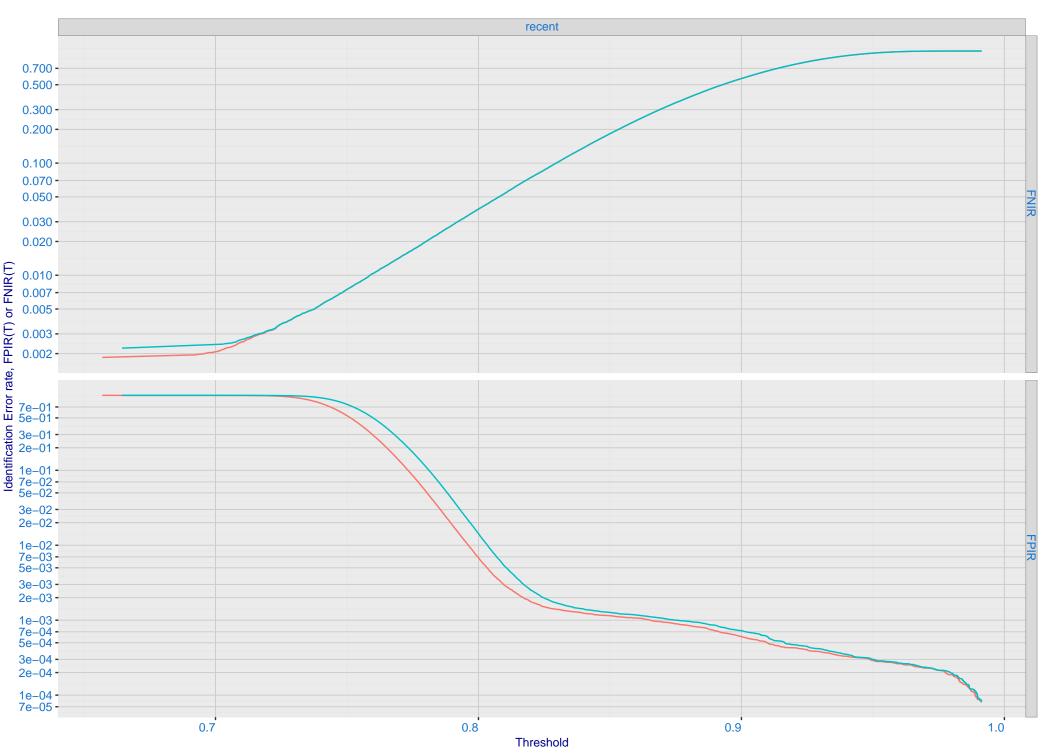


D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration** Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 sensetime 004 0.050 -0.030 -0.020 -0.010 -0.007 - 0.005 - 0.005 - 0.002 - 0.001 - 0.001 - 0.700 - 0.500 - 0.200 enrolment_style random-ONE-MATE recent-ONE-MATE unconsolidated-ALL-MATES unconsolidated-ANY-MATE 0.100 vigilantsolutions 6 0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -

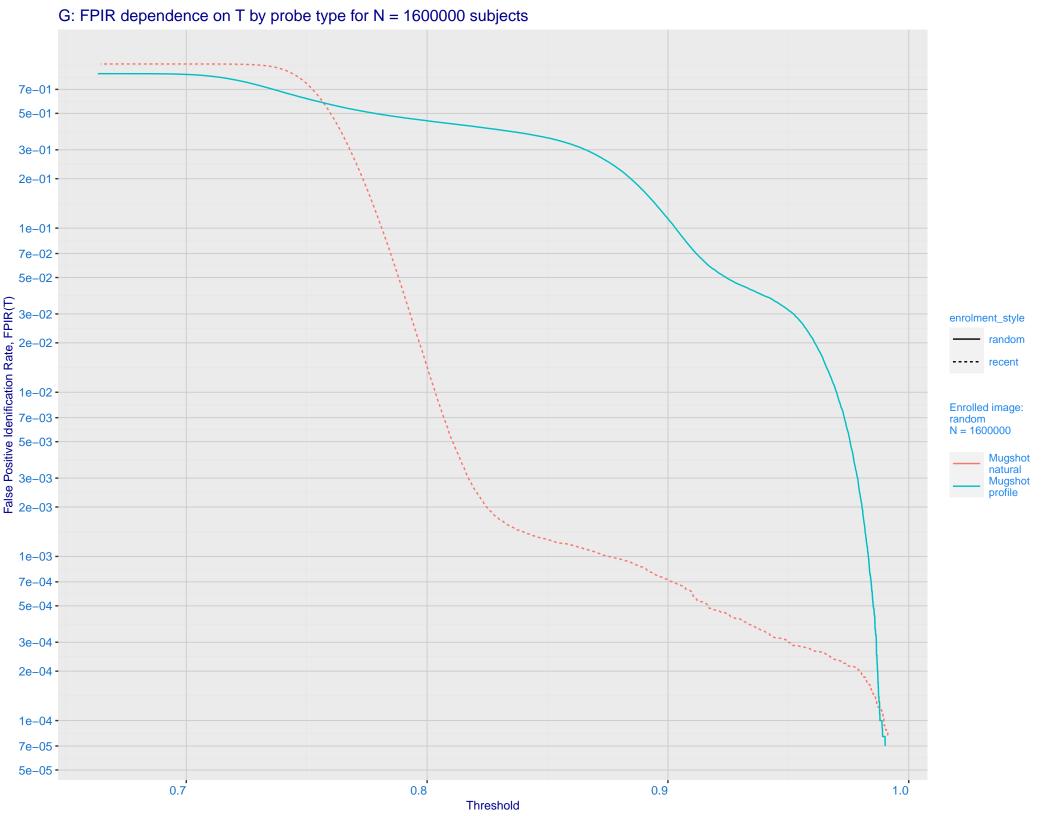
False positive identification rate, FPIR(T)

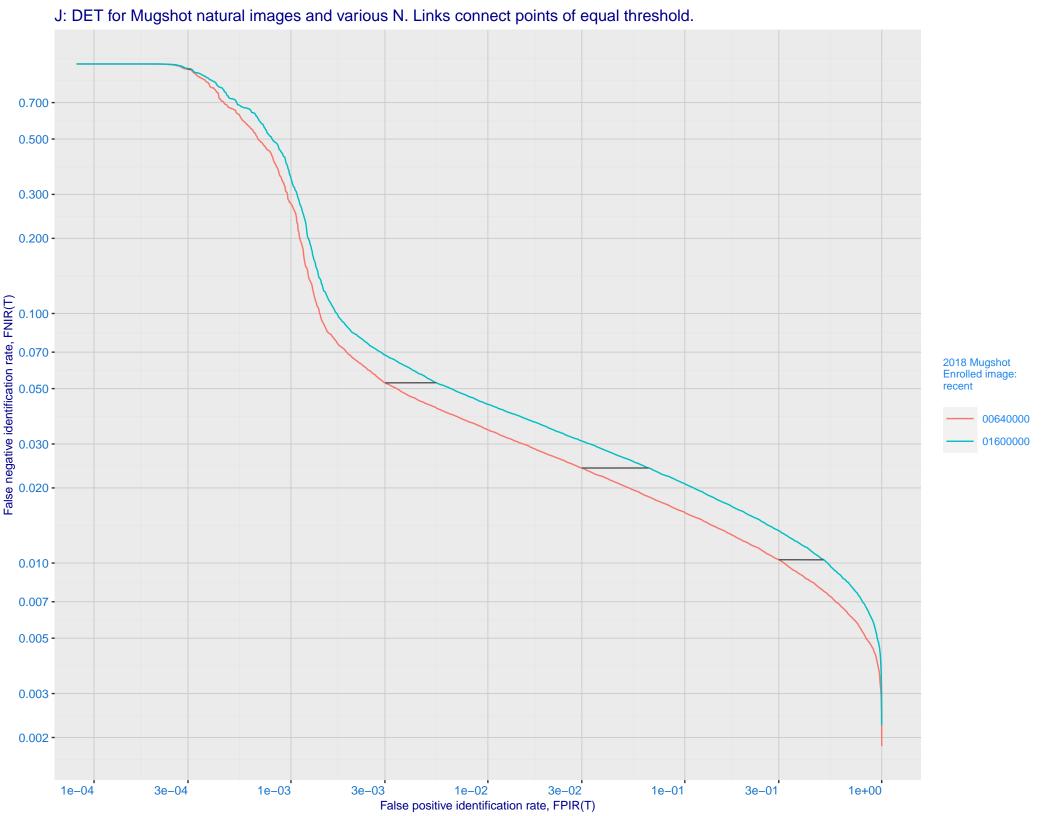
E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



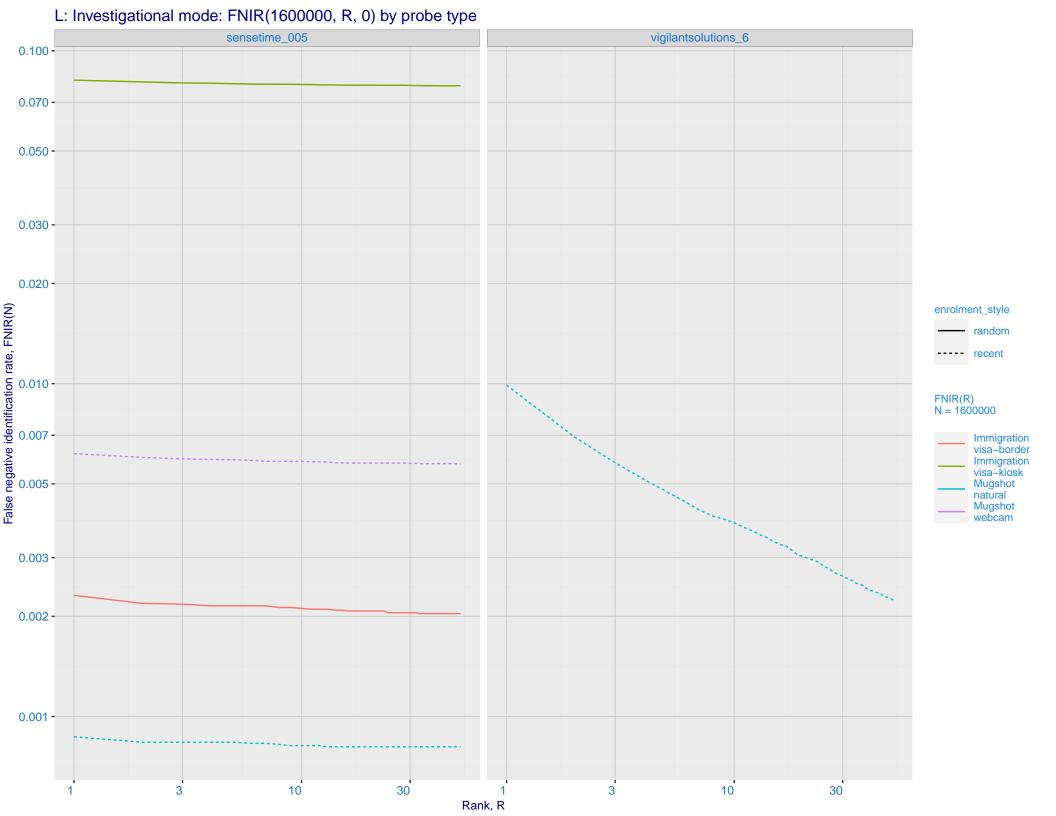


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -Selectivity, SEL(T) 5e-01 -5e-01 -3e-01 -2e-01 -Enrolled images: recent N = 1600000 Mugshot natural 1e-01 -7e-02 -5e-02 -3e-02 -2e-02 -1e-02 -7e-03 -5e-03 -3e-03 -2e-03 -1e-02 1e-04 3e-04 1e-03 3e-03 3e-02 1e-01 3e-01 False Positive Idenification Rate, FPIR(T)

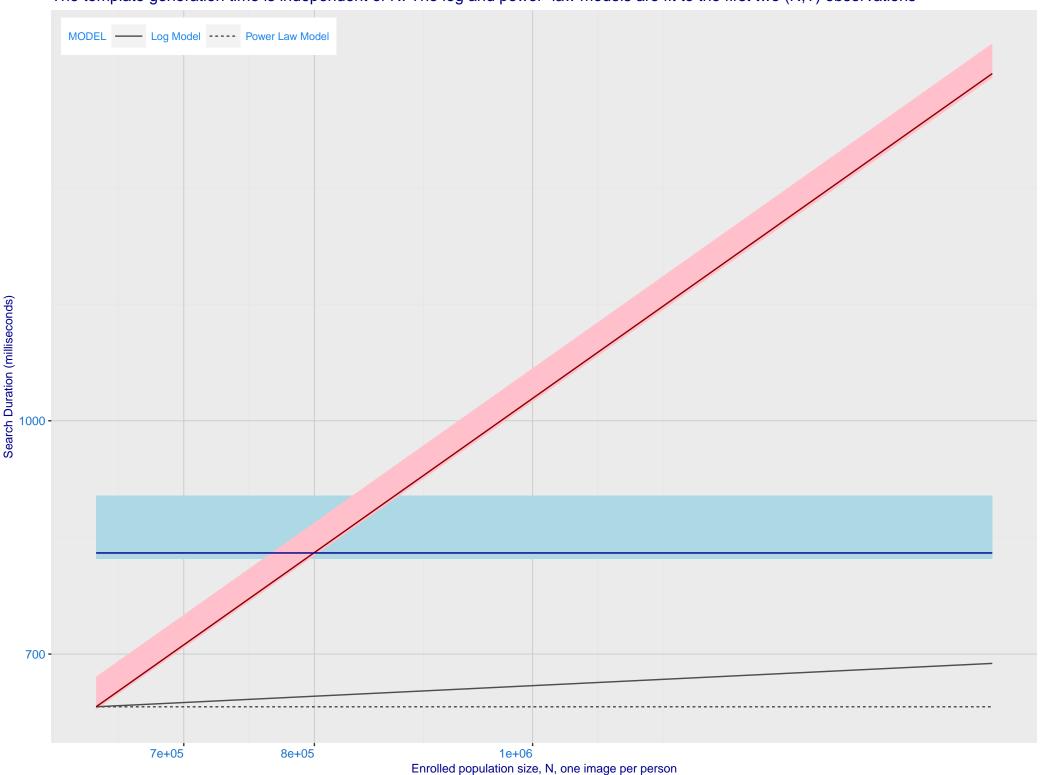




K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -Ealse negative identification rate, FNIR(N) 0.002 - 0.001 - 0.000 - 0.050 - 0.050 - 0.030 - 0. FNIR@Rank = 1 sensetime_005 vigilantsolutions_6 Mugshot webcam Mugshot natural enrolment_style random ---- recent 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



