A: Datasheet

Algorithm: vigilantsolutions_2

Developer: Vigilant Solutions

Submission Date: 2018_02_14

Template size: 1544 bytes

Template time (2.5 percentile): 795 msec

Template time (median): 825 msec

Template time (97.5 percentile): 873 msec

Investigation:

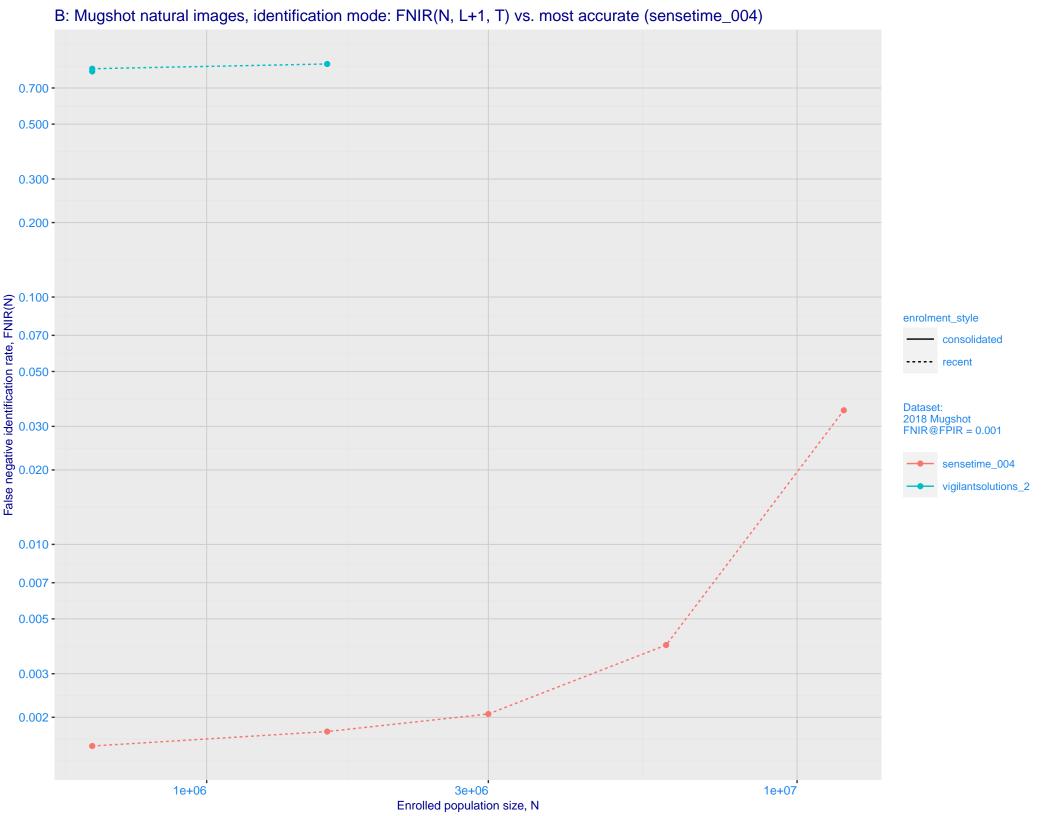
Frontal mugshot ranking 239 (out of 259) -- FNIR(1600000, 0, 1) = 0.2366 vs. lowest 0.0009 from sensetime_005

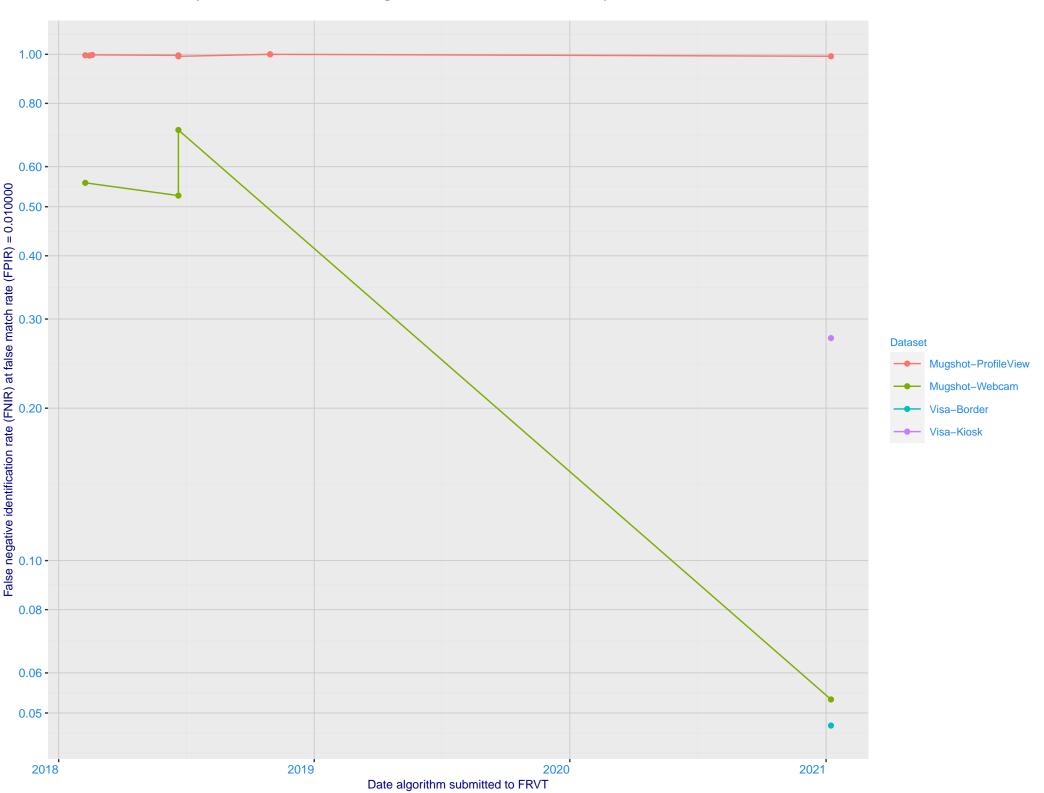
Mugshot profile ranking 158 (out of 190) -- FNIR(1600000, 0, 1) = 0.9664 vs. lowest 0.0591 from sensetime_005

Identification:

Frontal mugshot ranking 242 (out of 259) -- FNIR(1600000, T, L+1) = 0.8753, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot profile ranking 124 (out of 189) -- FNIR(1600000, T, L+1) = 0.9988, FPIR=0.001000 vs. lowest 0.1733 from sensetime_005

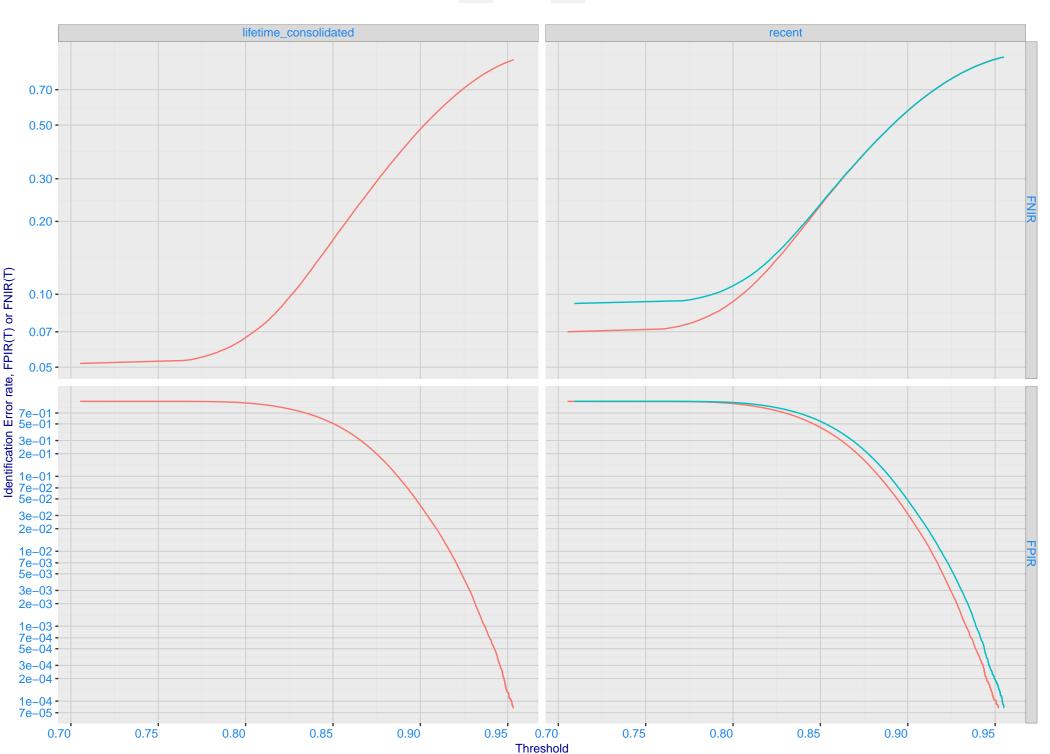




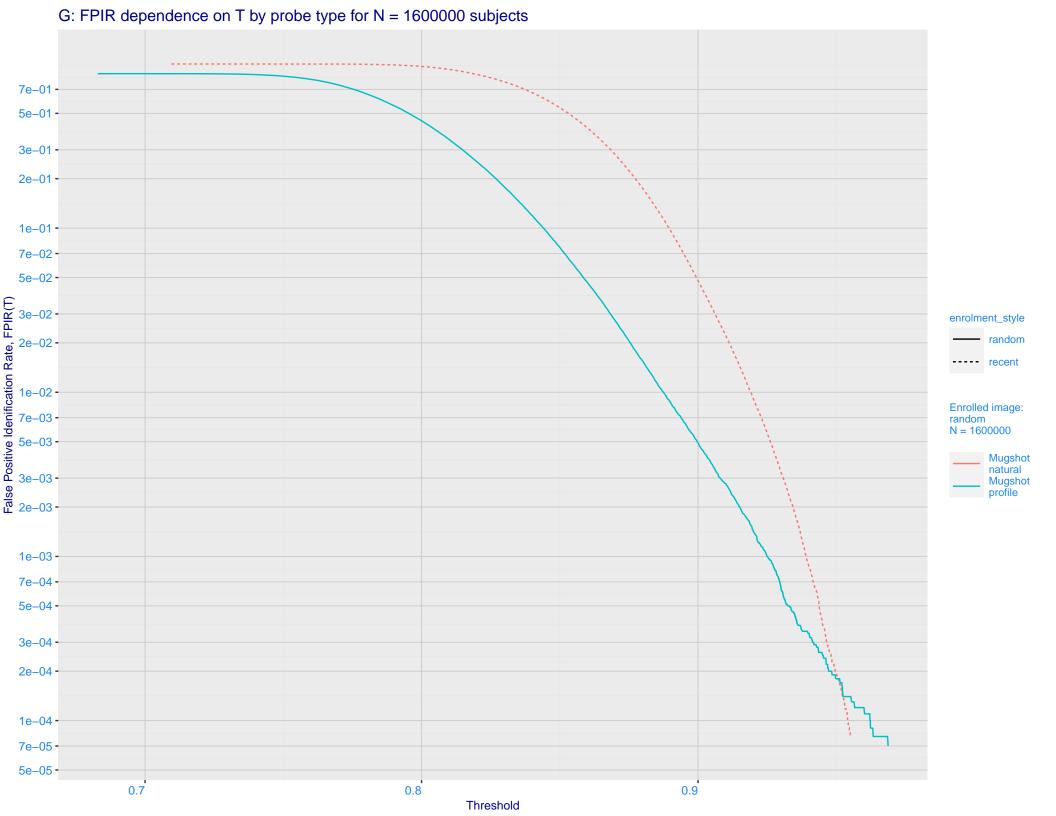
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 - 0.005 - 0.005 - 0.002 - 0.001 - 0.001 - 0.700 - 0.500 - 0.200 enrolment_style random-ONE-MATE 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 - $1e^{-0.4}e^{-0.3}e^{-0.4}e^{-0.3}e^{-0.3}e^{-0.3}e^{-0.3}e^{-0.3}e^{-0.3}e^{-0.1}e^{-0.3}e^{-0.1}e^{-0.3}e^{-0.4}e^{-0.3}e^{$ False positive identification rate, FPIR(T)

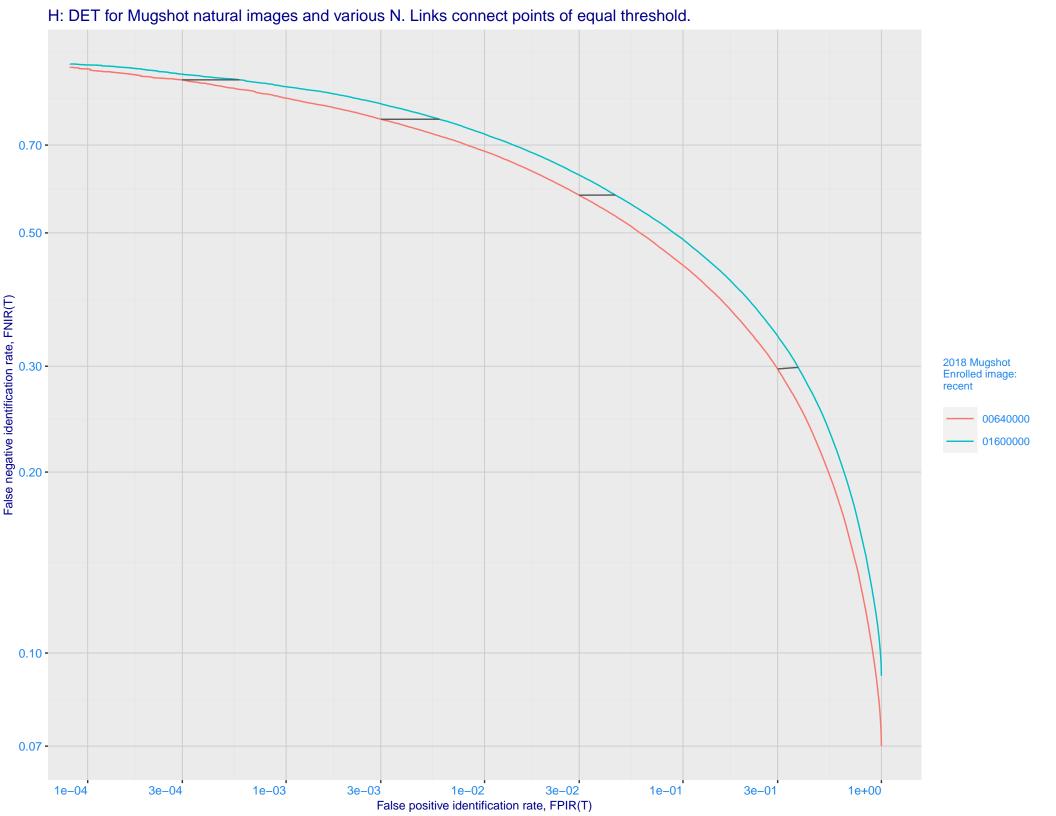
E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



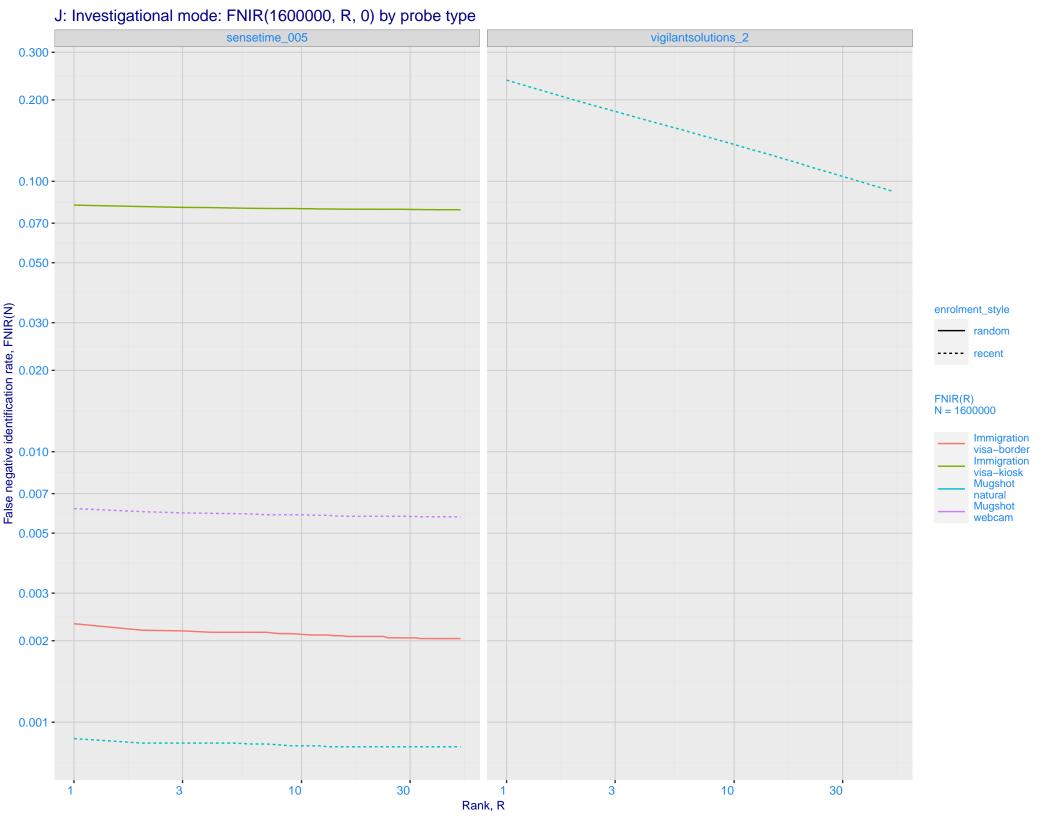


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -2e-01 -1e-01 -7e-02 -Enrolled images: recent N = 1600000 Mugshot natural 5e-02 -3e-02 -2e-02 -1e-02 -7e-03 -5e-03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

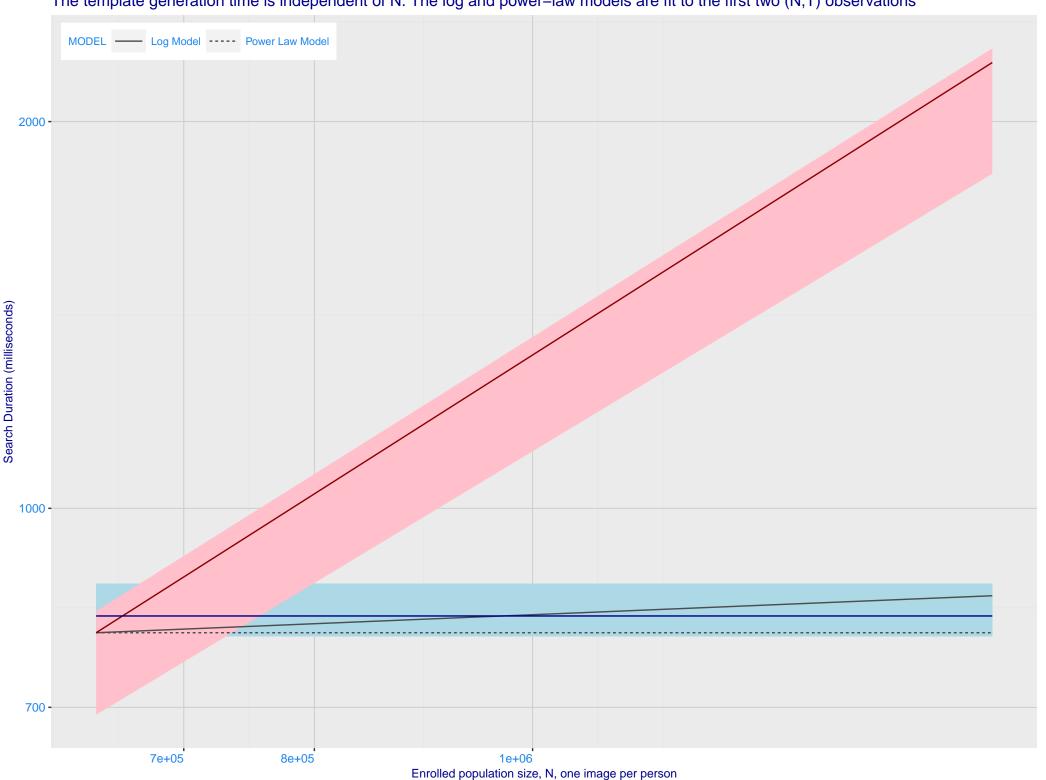




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Palse negative identification rate, FNIR(N) 0.002 - 0.001 - 0.300 - 0.200 - 0.100 - 0.070 - 0. • enrolment_style - consolidated ---- random --- recent Mugshot webcam Mugshot natural FNIR@Rank = 1 sensetime_005 vigilantsolutions_2 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



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



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



