A: Datasheet

Algorithm: vigilantsolutions_0

Developer: Vigilant Solutions

Submission Date: 2018_02_08

Template size: 1544 bytes

Template time (2.5 percentile): 795 msec

Template time (median): 825 msec

Template time (97.5 percentile): 878 msec

Investigation:

Frontal mugshot ranking 212 (out of 259) -- FNIR(1600000, 0, 1) = 0.1230 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 187 (out of 221) -- FNIR(1600000, 0, 1) = 0.2123 vs. lowest 0.0062 from sensetime_005

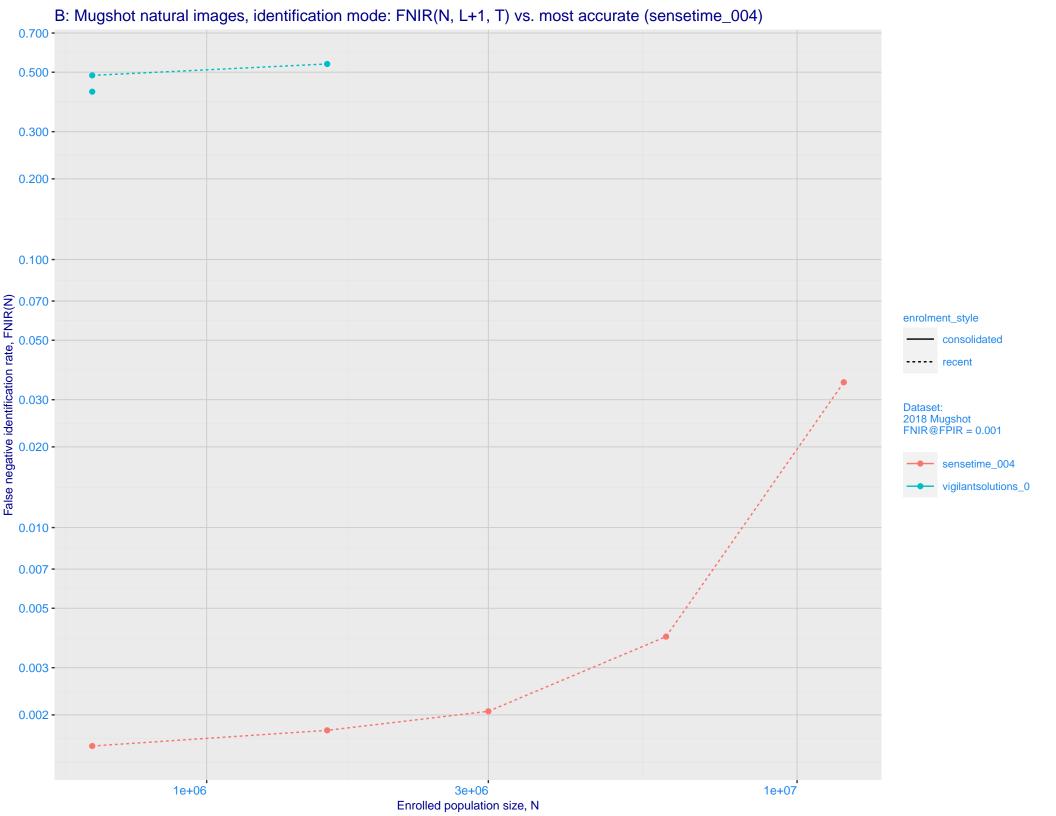
Mugshot profile ranking 175 (out of 190) -- FNIR(1600000, 0, 1) = 0.9803 vs. lowest 0.0591 from sensetime_005

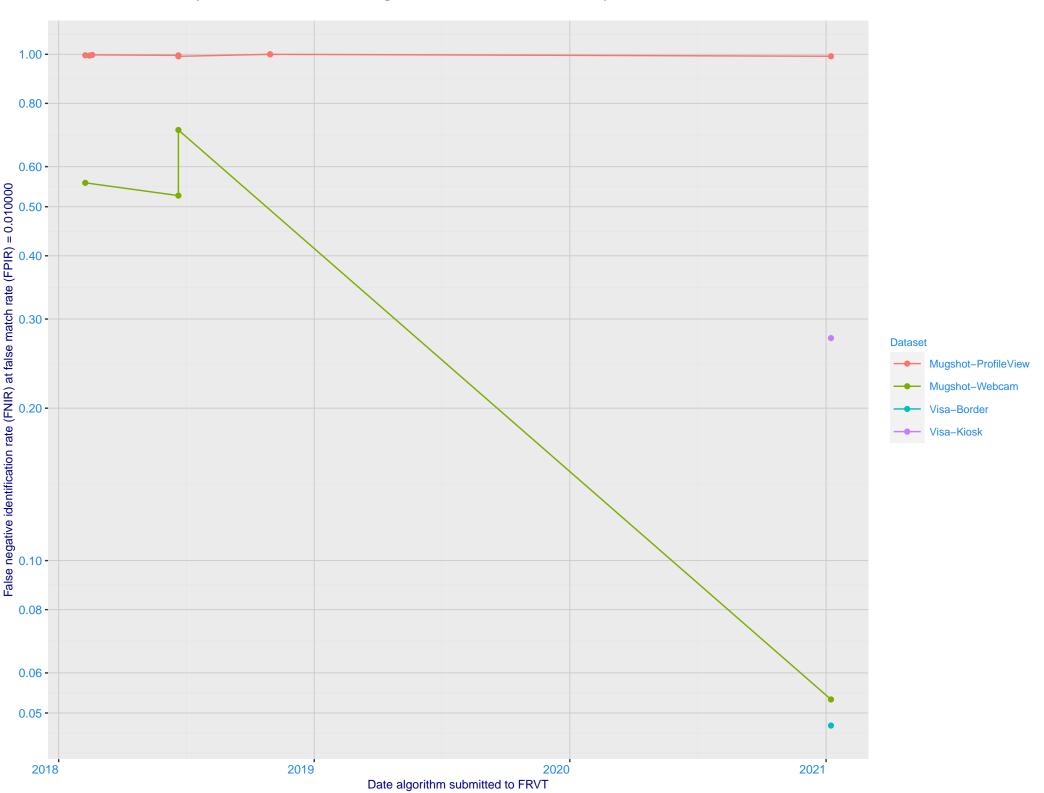
Identification:

Frontal mugshot ranking 218 (out of 259) -- FNIR(1600000, T, L+1) = 0.5366, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 191 (out of 219) -- FNIR(1600000, T, L+1) = 0.6953, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

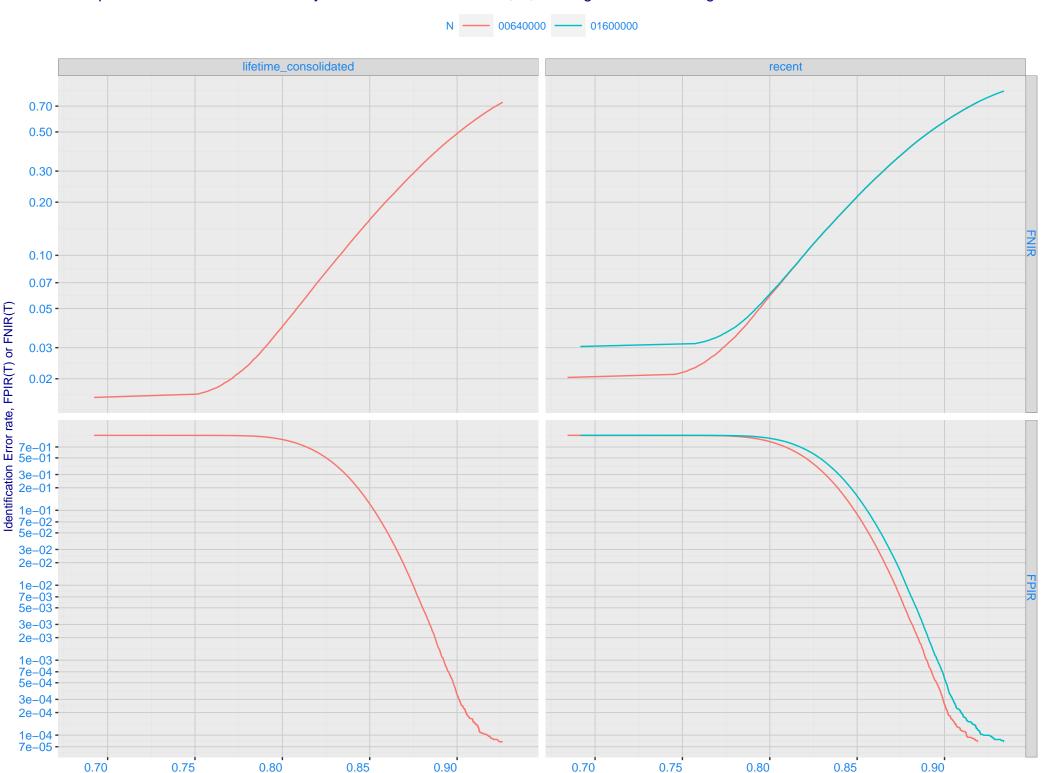
Mugshot profile ranking 110 (out of 189) -- FNIR(1600000, T, L+1) = 0.9978, FPIR=0.001000 vs. lowest 0.1733 from sensetime_005





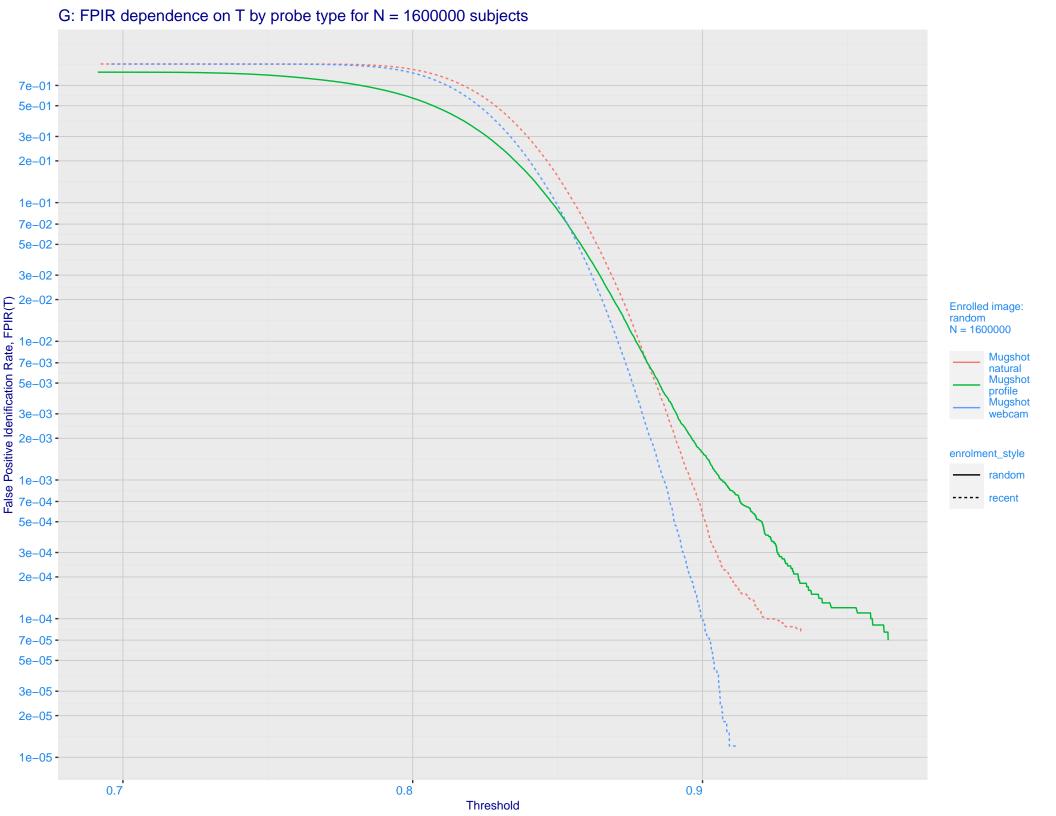
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.0001 - 0.0001 - 0.500 - 0.2001 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)

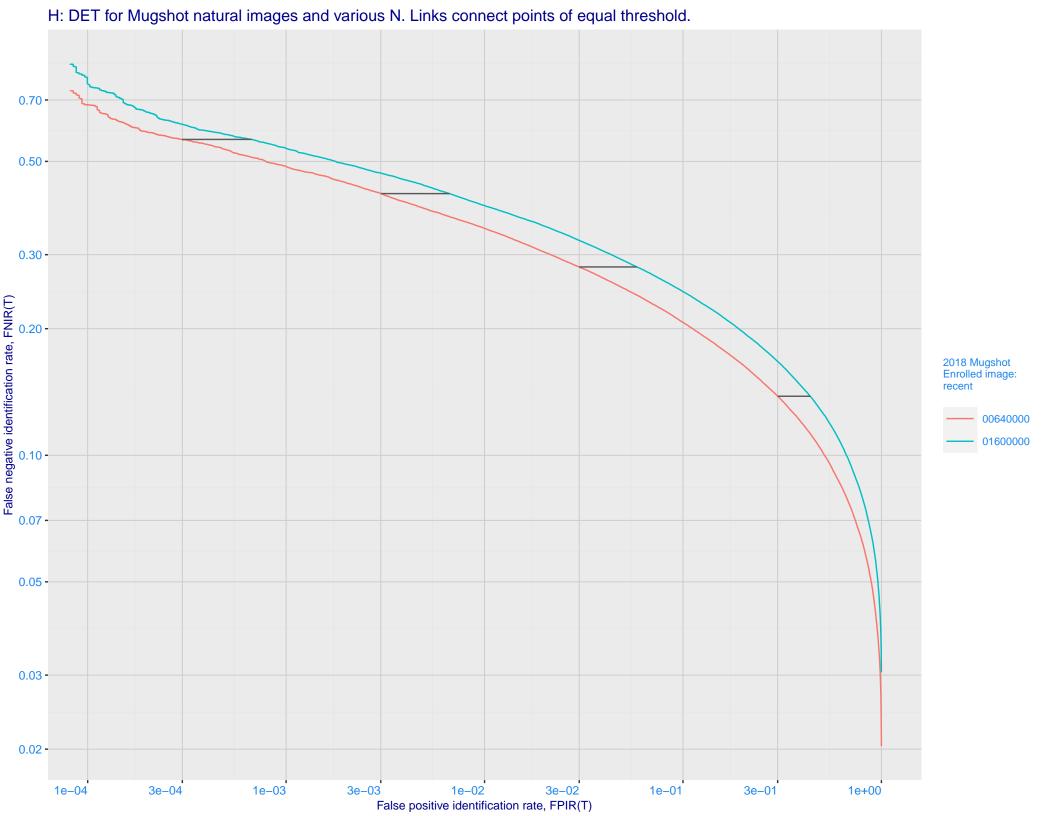
E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



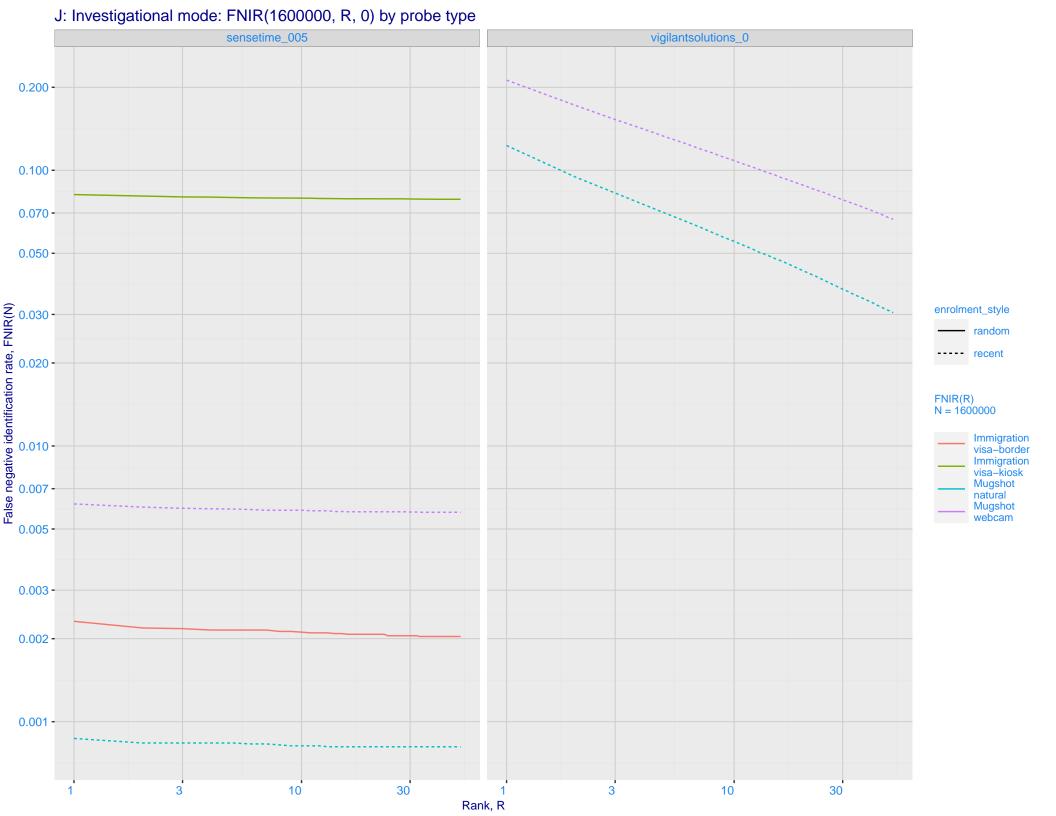
Threshold

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)

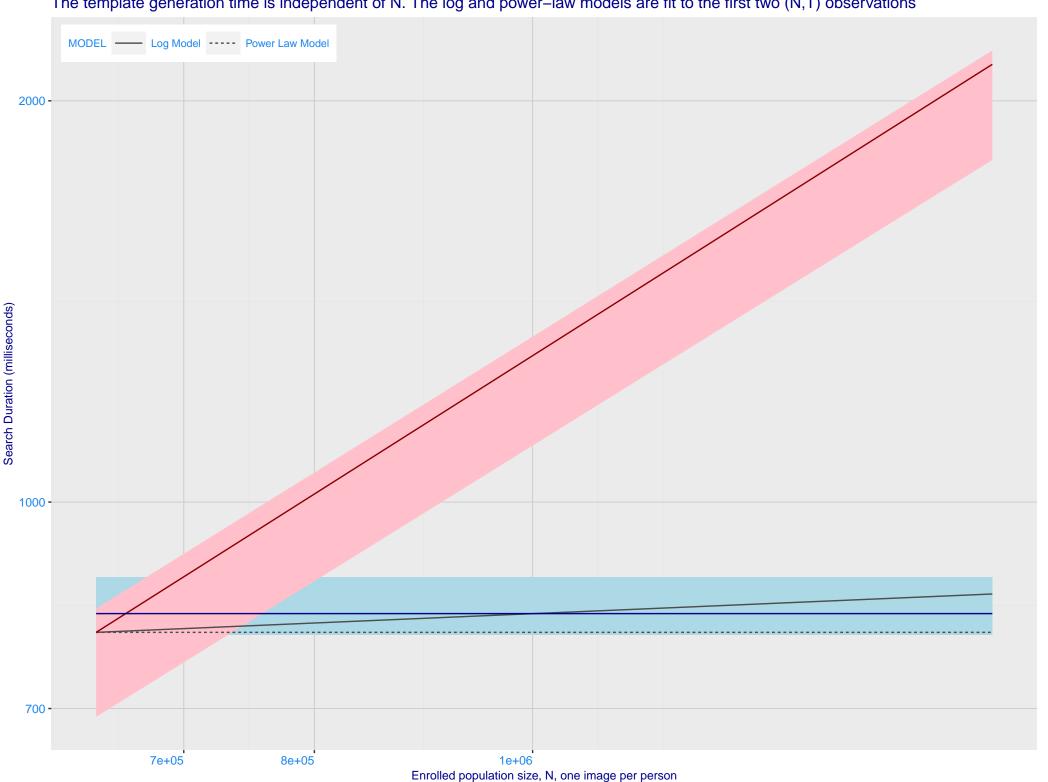




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Ealse negative identification rate, FNIR(N) 0.003 - 0.001 - 0.001 - 0.100 - 0.100 - 0.070 - 0. enrolment_style consolidated ---- random --- recent Mugshot natural Mugshot webcam FNIR@Rank = 1 sensetime_005 vigilantsolutions_0 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



