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 220 (out of 265) -- FNIR(1600000, 0, 1) = 0.1249 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 198 (out of 227) -- FNIR(1600000, 0, 1) = 0.2444 vs. lowest 0.0062 from sensetime_005

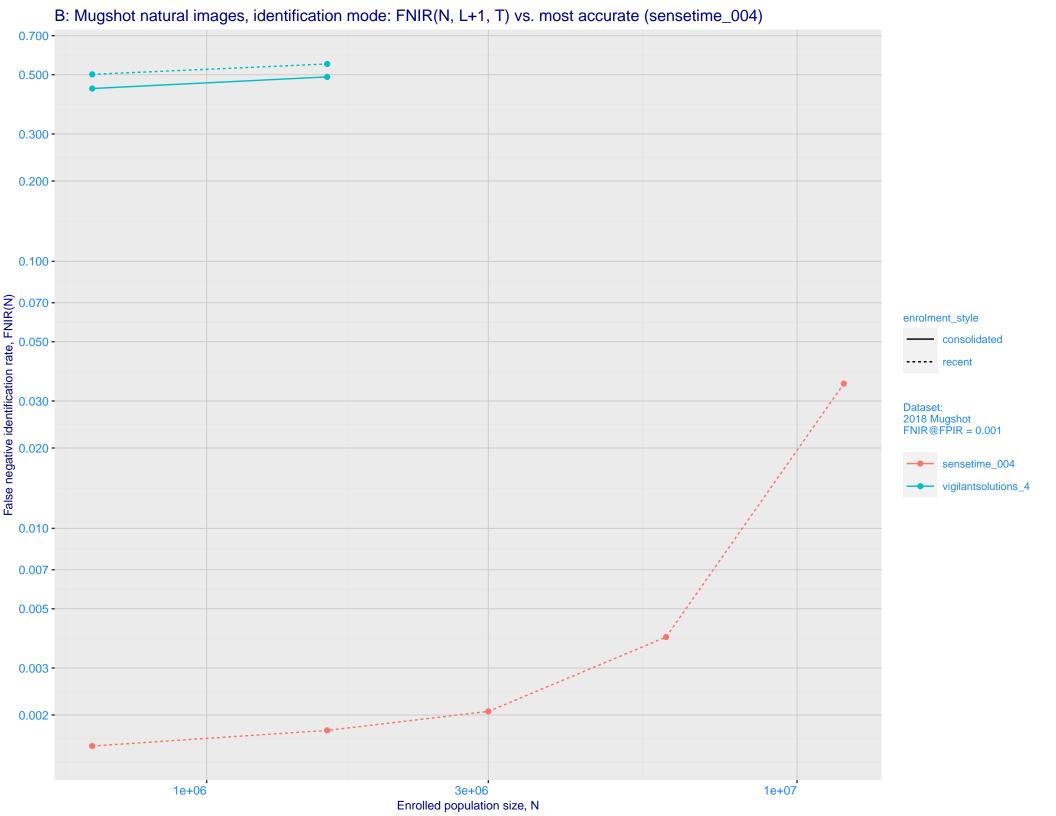
Mugshot profile ranking 158 (out of 196) -- FNIR(1600000, 0, 1) = 0.9652 vs. lowest 0.0591 from sensetime_005

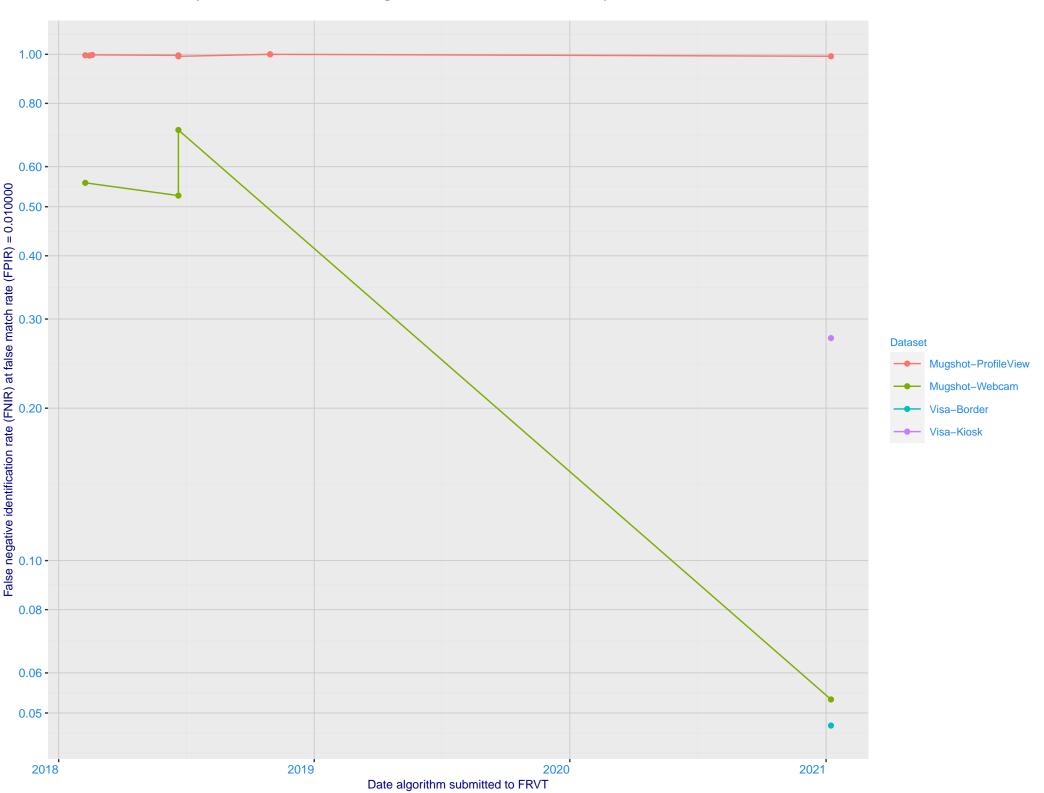
Identification:

Frontal mugshot ranking 225 (out of 265) -- FNIR(1600000, T, L+1) = 0.5485, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 204 (out of 225) -- FNIR(1600000, T, L+1) = 0.8169, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 106 (out of 195) -- FNIR(1600000, T, L+1) = 0.9958, FPIR=0.001000 vs. lowest 0.1331 from hr_000

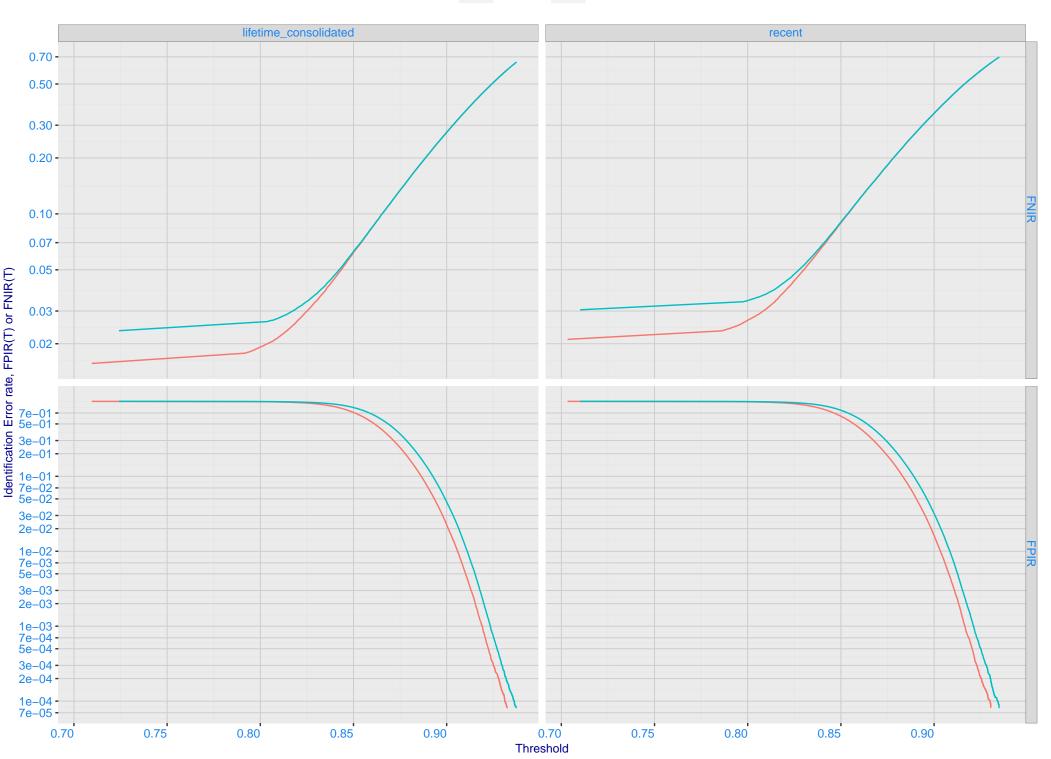




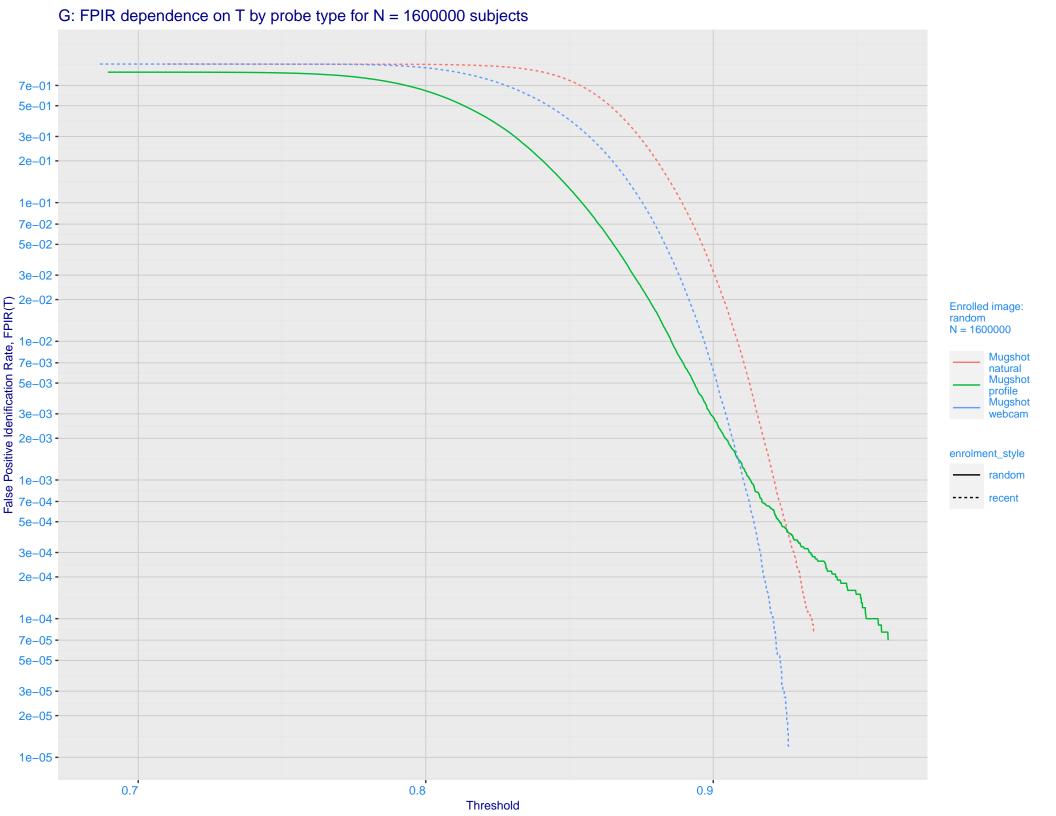
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.0001 - 0.500 - 0.500 - 0.200 - 0.200 - 0.001 - 0 enrolment_style consolidated-ONE-MATE 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 -

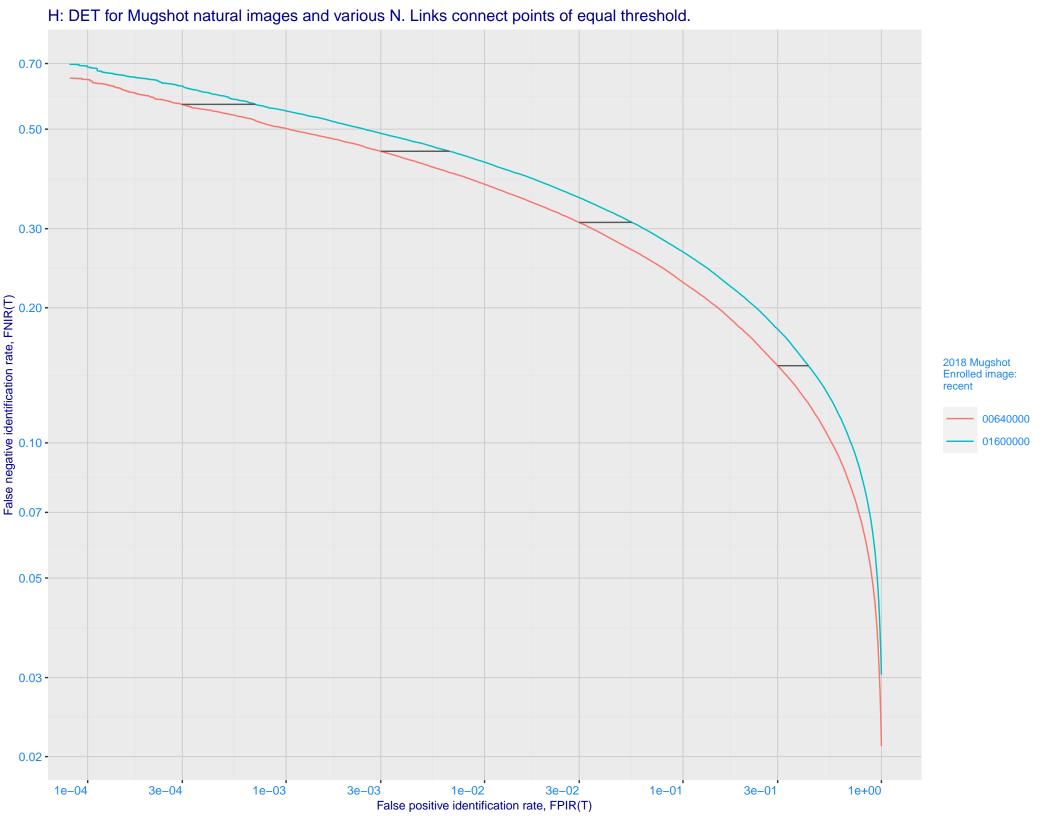
False positive identification rate, FPIR(T)





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)

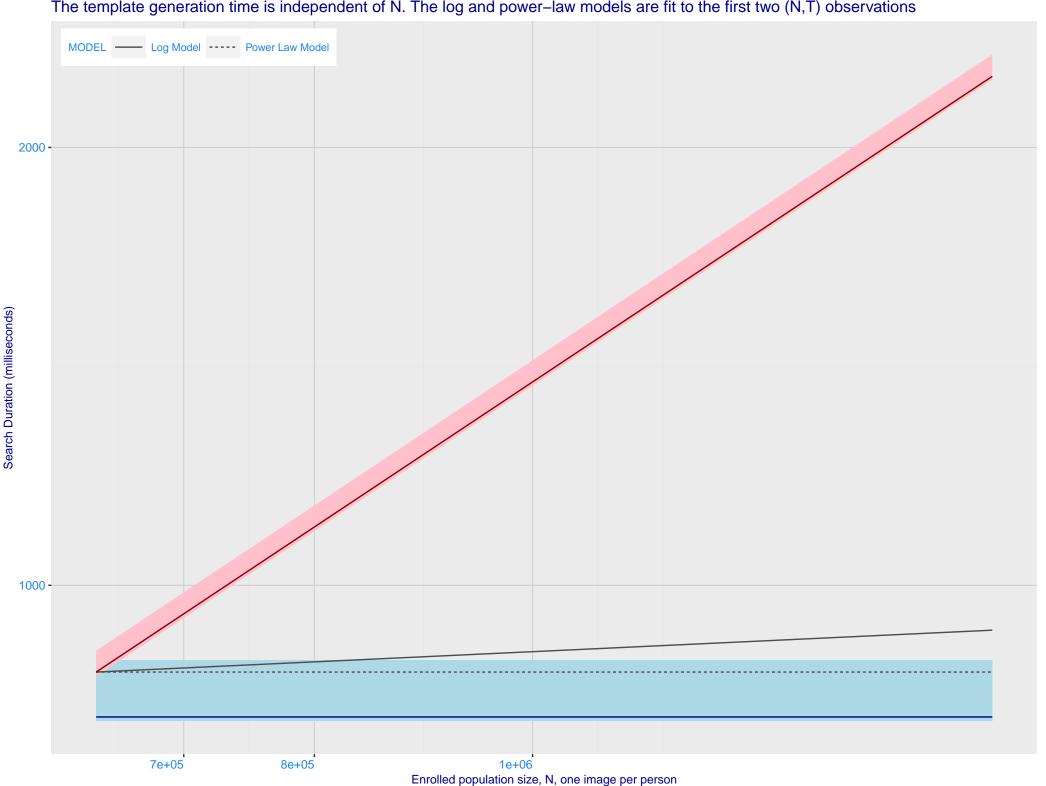




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Palse negative identification rate, FNIR(N) 0.002 - 0.001 - 0.300 - 0.100 - 0.070 - 0. FNIR@Rank = 1 sensetime_005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

J: Investigational mode: FNIR(1600000, R, 0) by probe type sensetime_005 vigilantsolutions_4 0.300 -0.200 -0.100 -0.070 -0.050 enrolment_style False negative identification rate, FNIR(N) - 0.000 - lifetime_consolidated ---- random --- recent FNIR(R) N = 1600000 Immigration visa-border Immigration visa-kiosk Mugshot natural Mugshot webcam 0.005 -0.003 -0.002 -0.001 -3 10 30 3 10 30 Rank, R

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



