A: Datasheet

Algorithm: 3divi_4

Developer: 3Divi

Submission Date: 2018_06_19

Template size: 4096 bytes

Template time (2.5 percentile): 489 msec

Template time (median): 614 msec

Template time (97.5 percentile): 838 msec

Investigation:

Frontal mugshot ranking 151 (out of 259) -- FNIR(1600000, 0, 1) = 0.0175 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 153 (out of 221) -- FNIR(1600000, 0, 1) = 0.0621 vs. lowest 0.0062 from sensetime_005

Immigration visa-border ranking 84 (out of 142) -- FNIR(1600000, 0, 1) = 0.0354 vs. lowest 0.0014 from visionlabs_009

Immigration visa-kiosk ranking 88 (out of 139) -- FNIR(1600000, 0, 1) = 0.2788 vs. lowest 0.0694 from cib_000

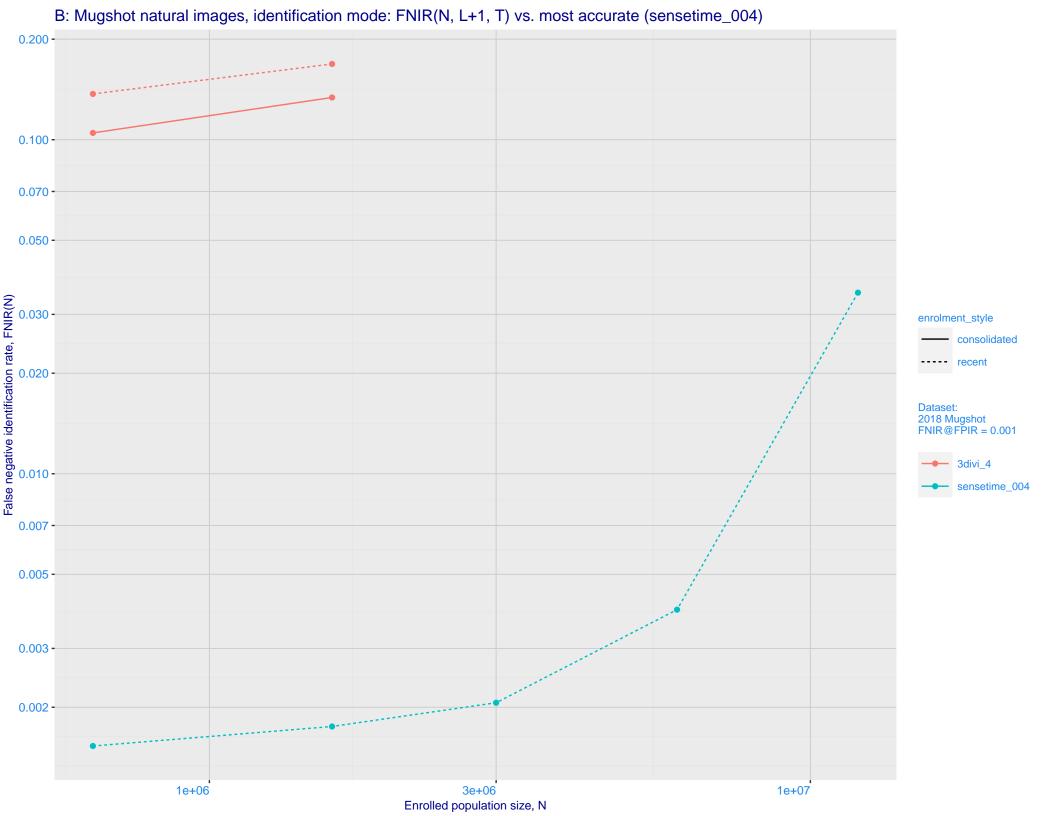
Identification:

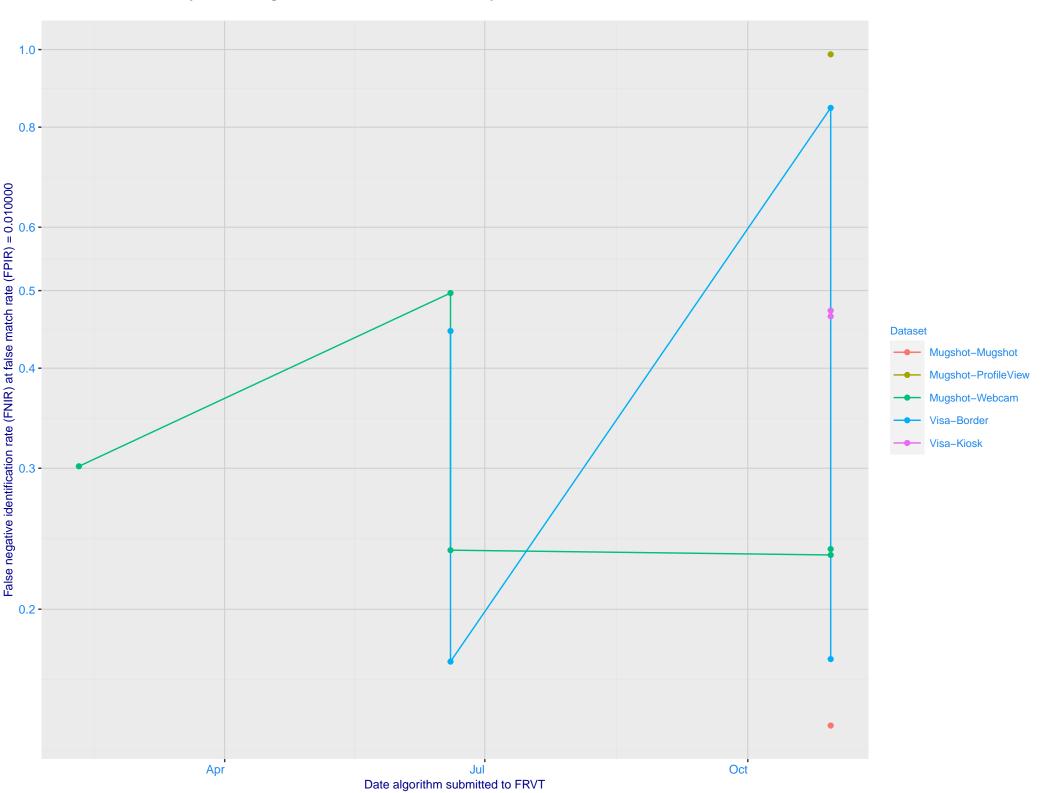
Frontal mugshot ranking 162 (out of 259) -- FNIR(1600000, T, L+1) = 0.1686, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 161 (out of 219) -- FNIR(1600000, T, L+1) = 0.3426, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Immigration visa-border ranking 85 (out of 139) -- FNIR(1600000, T, L+1) = 0.2776, FPIR=0.001000 vs. lowest 0.0059 from sensetime_004

Immigration visa-kiosk ranking 66 (out of 134) -- FNIR(1600000, T, L+1) = 0.6075, FPIR=0.001000 vs. lowest 0.1048 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) 0.002 - 0.000 - 0.500 - 0.500 - 0.200 - 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)

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

2.50

2.75

3.00

3.25

3.50

2.50

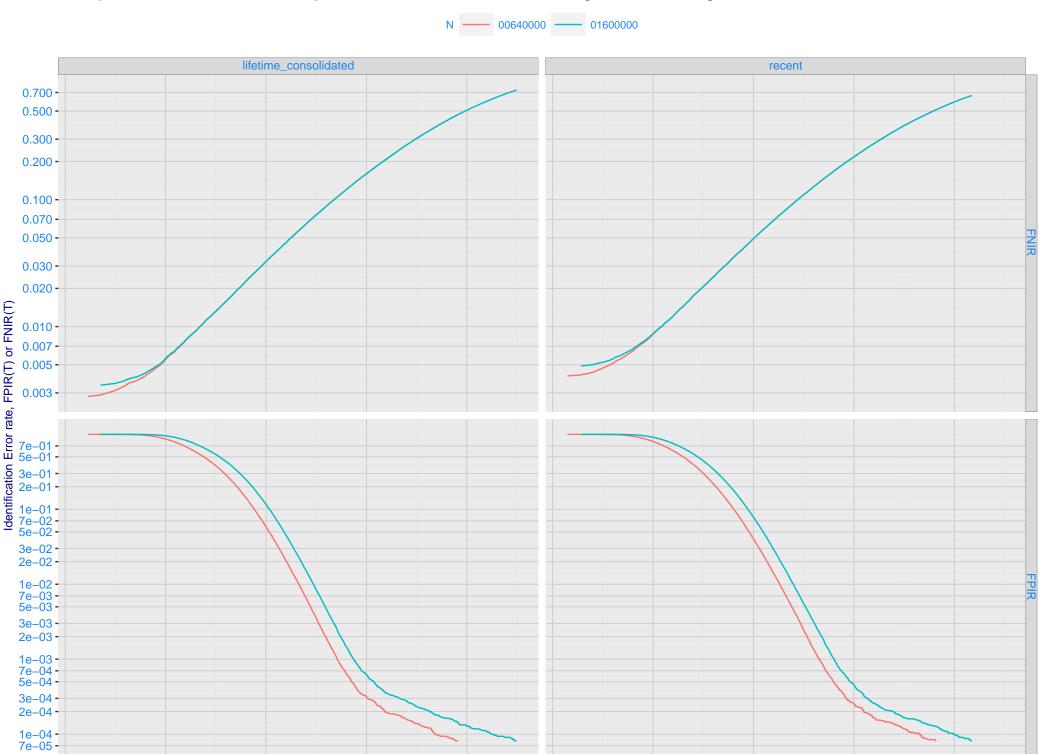
Threshold

2.75

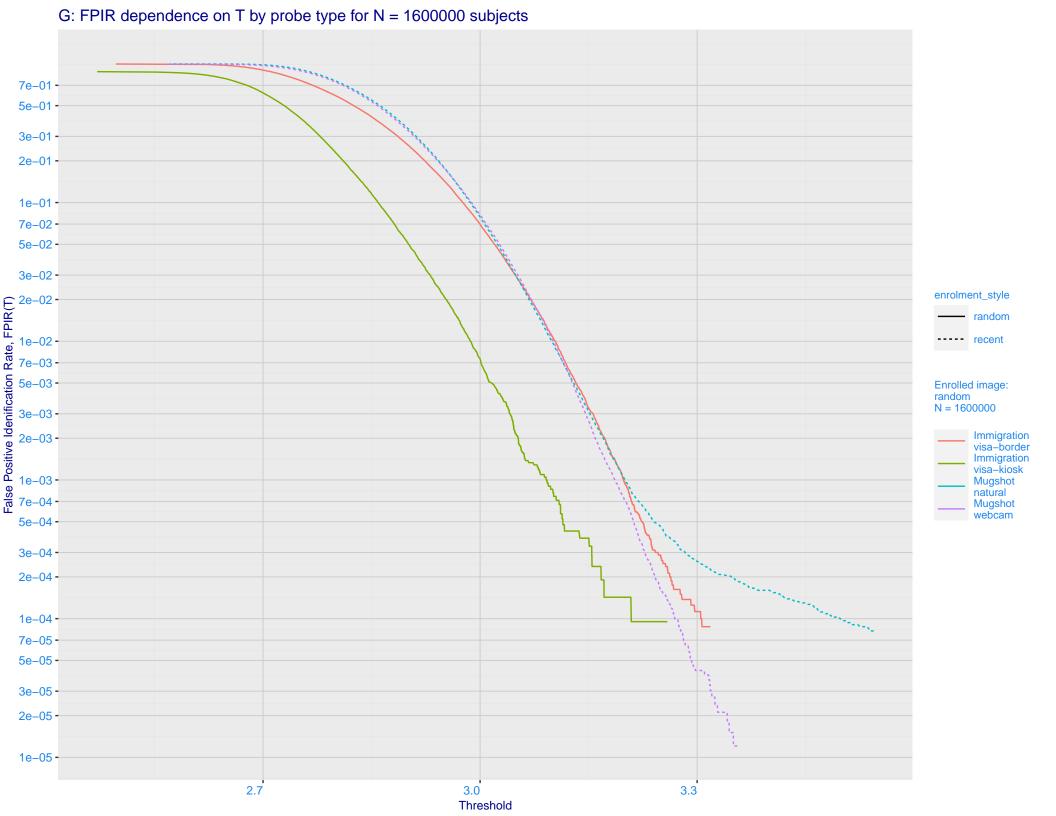
3.00

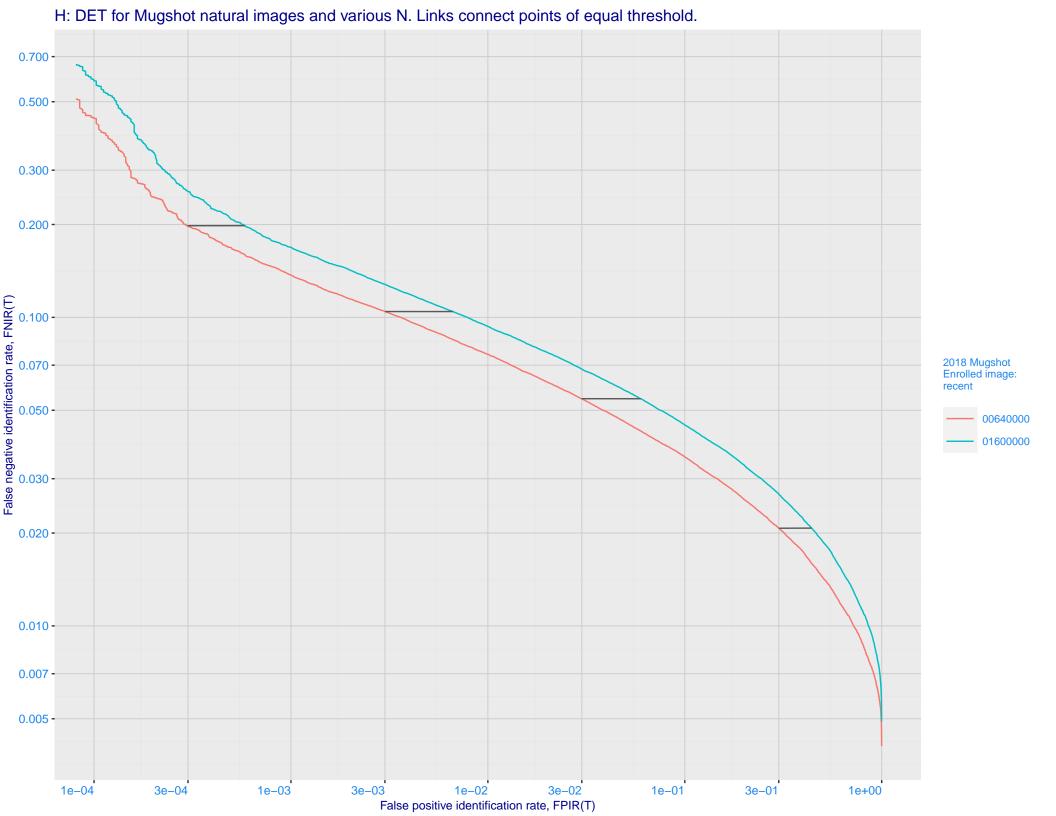
3.25

3.50

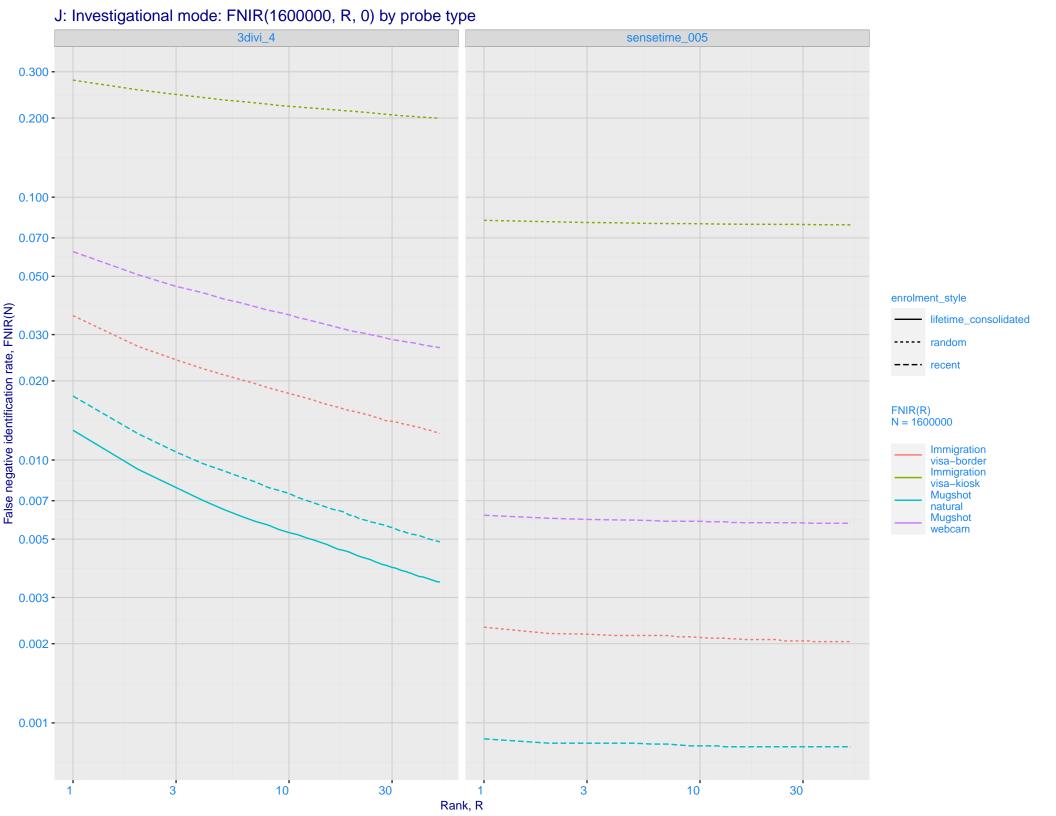


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -7e-02 -5e-02 -3e-02 -3e-02 -1e-02 -**Enrolled images:** recent N = 1600000 Mugshot natural Mugshot webcam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

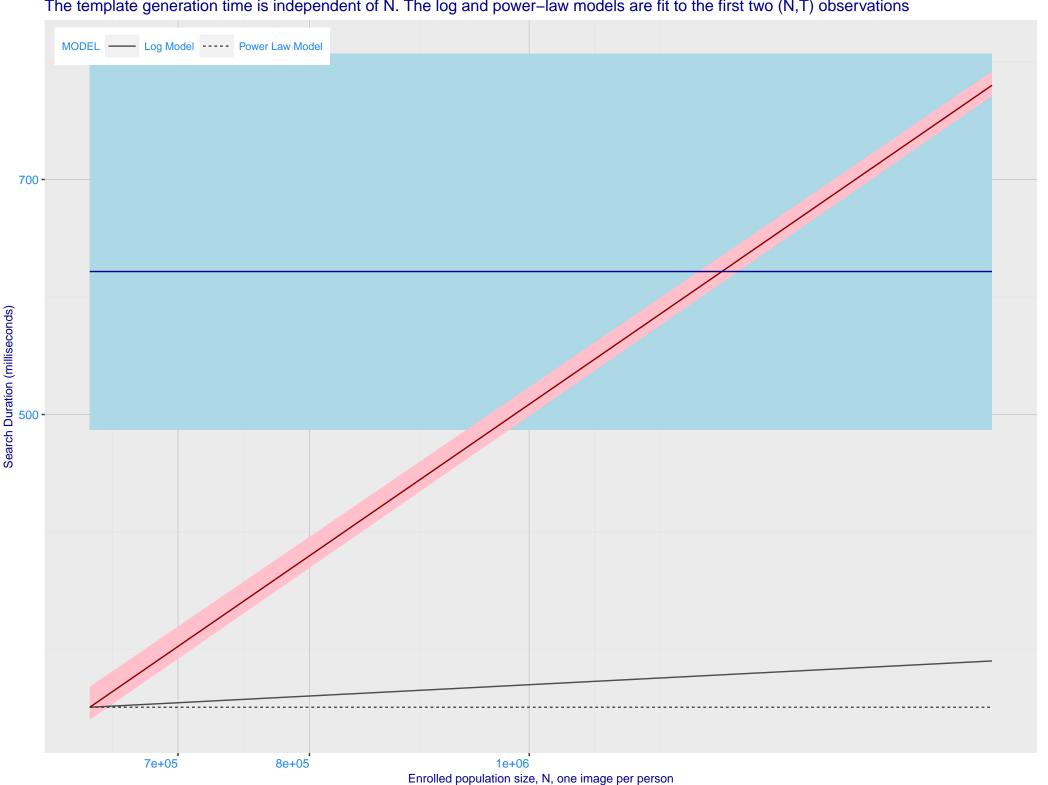




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Ealse negative identification rate, FNIR(N) 0.003 - 0.001 - 0.300 - 0.100 - 0.070 - 0. enrolment_style consolidated ---- random --- recent Mugshot webcam Mugshot natural FNIR@Rank = 1 --- 3divi_4 sensetime_005 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



