A: Datasheet

Algorithm: smilart_4

Developer: Smilart

Submission Date: 2018_10_30

Template size: 512 bytes

Template time (2.5 percentile): 149 msec

Template time (median): 168 msec

Template time (97.5 percentile): 191 msec

Investigation:

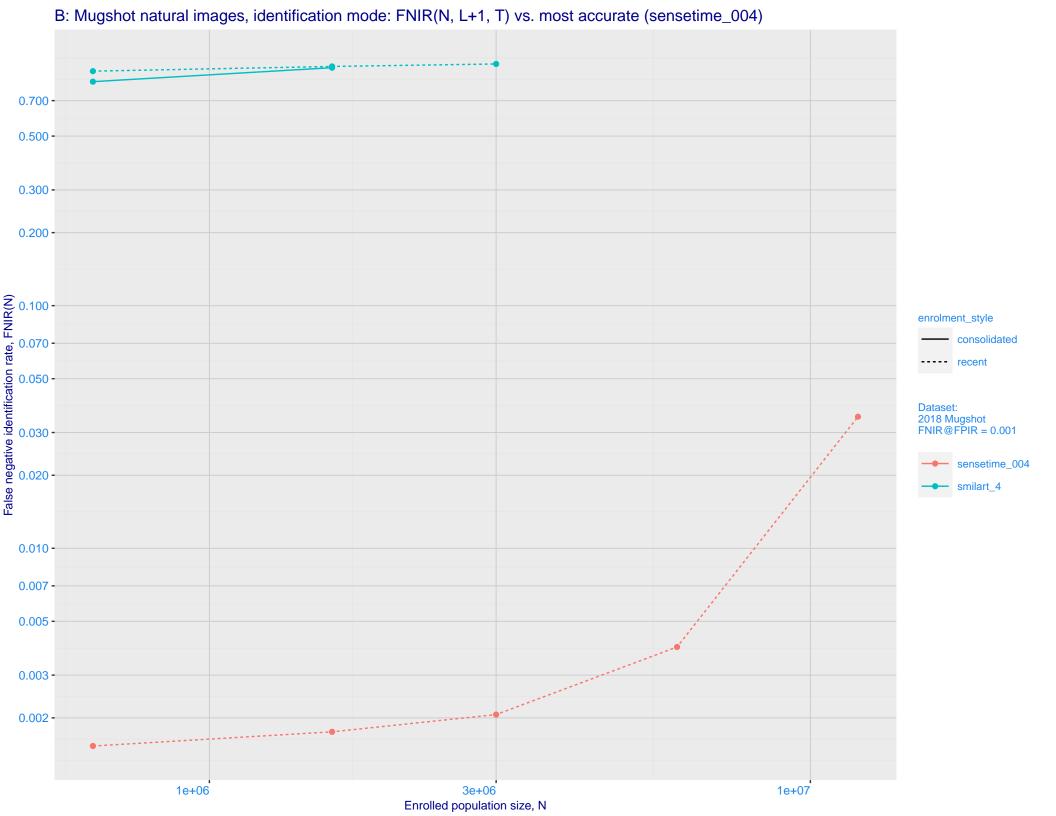
Frontal mugshot ranking 257 (out of 259) -- FNIR(1600000, 0, 1) = 0.9648 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 219 (out of 221) -- FNIR(1600000, 0, 1) = 0.9742 vs. lowest 0.0062 from sensetime_005

Identification:

Frontal mugshot ranking 248 (out of 259) -- FNIR(1600000, T, L+1) = 0.9682, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

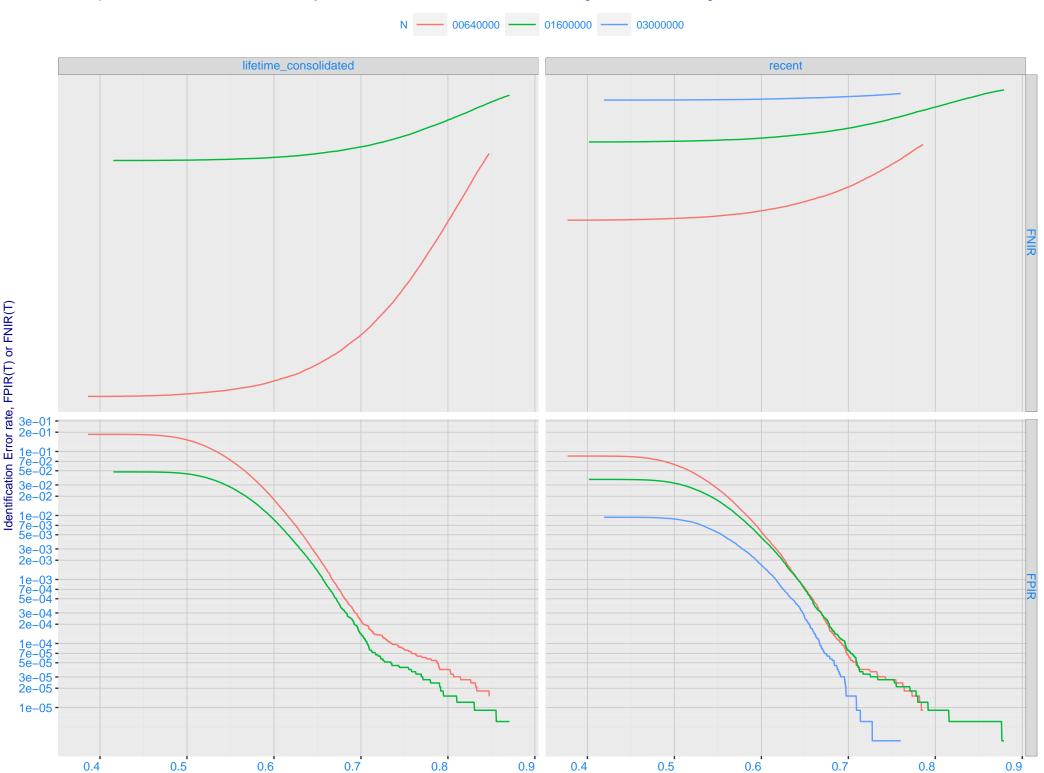
Mugshot webcam ranking 211 (out of 219) -- FNIR(1600000, T, L+1) = 0.9756, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003



Date algorithm submitted to FRVT

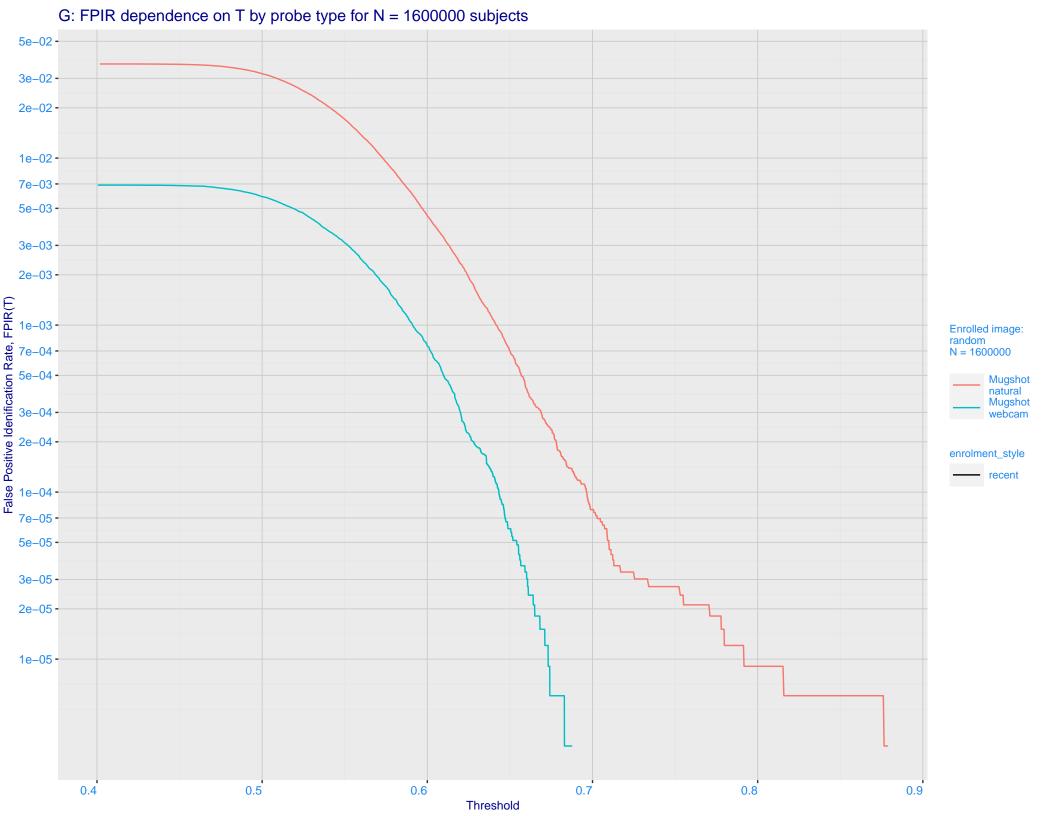
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration** Mugshot **Immigration** visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 - 0.005 - 0.005 - 0.002 - 0.001 - 0.001 - 0.700 - 0.500 - 0.200 enrolment_style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

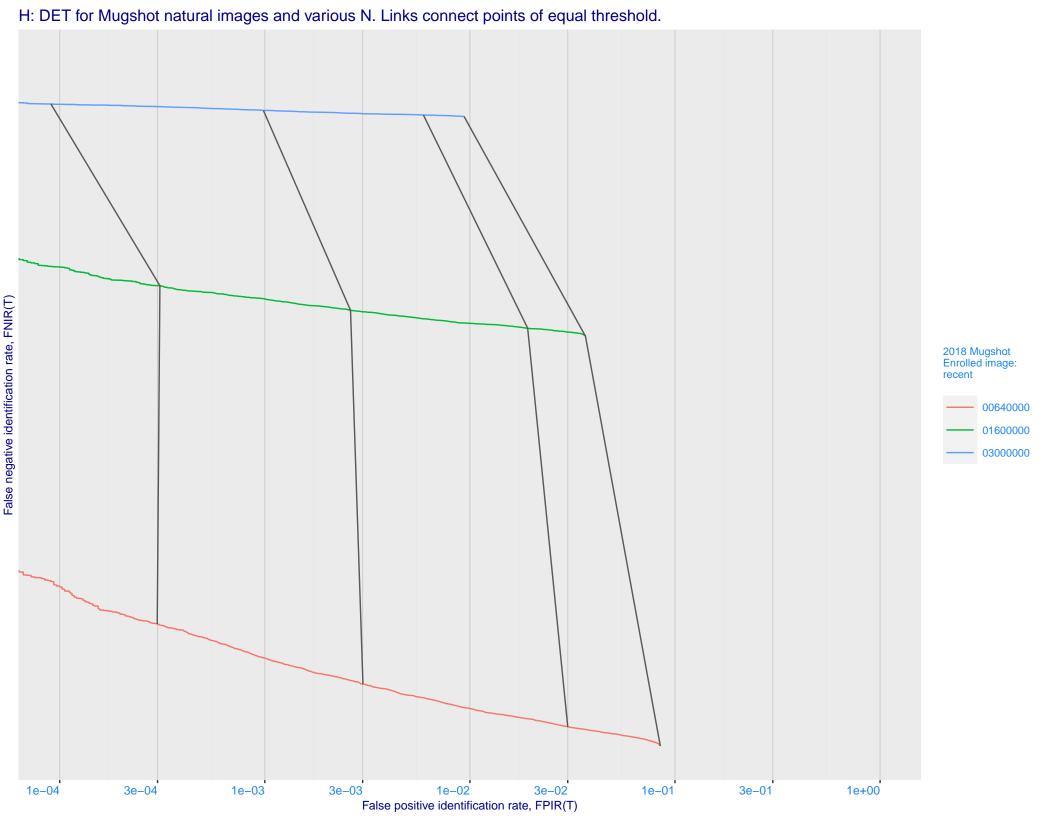
E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



Threshold

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

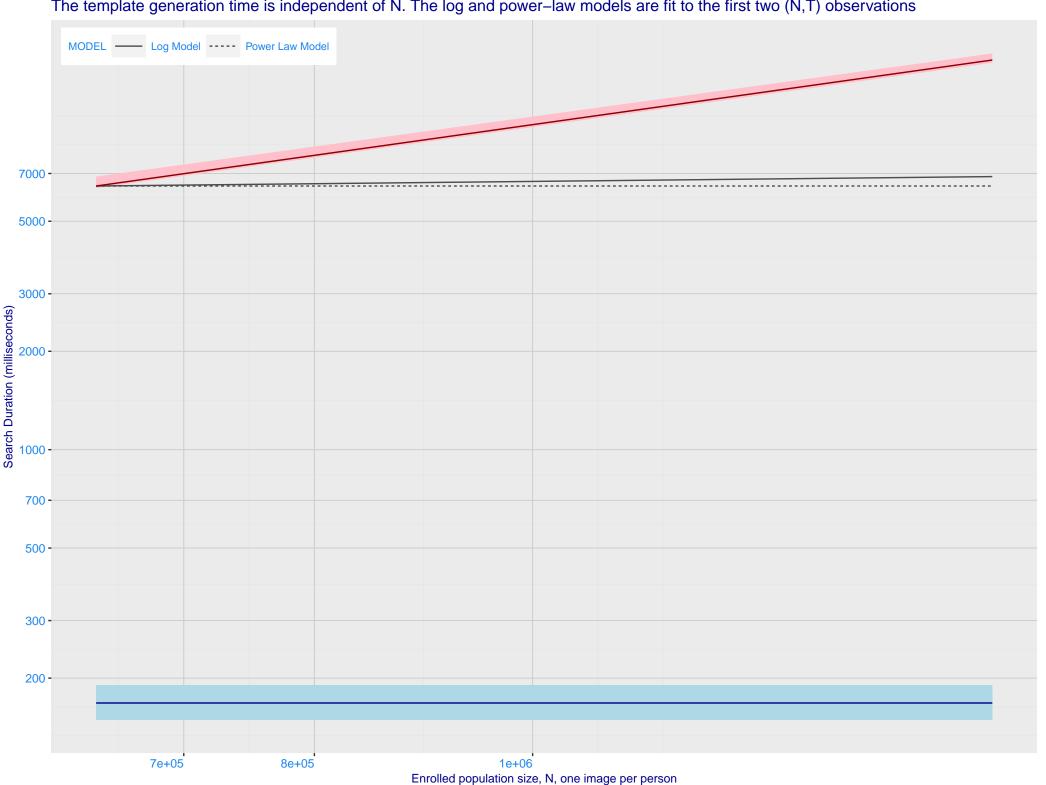




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 - 0.003 - 0.002 - 0.001 - 0.001 - 0.000 - 0.300 - 0.200 FNIR@Rank = 1 sensetime_005 smilart_4 Mugshot webcam Mugshot natural enrolment_style consolidated ---- random --- recent 0.100 -0.070 -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 smilart_4 0.700 -0.500 -0.300 -0.200 -0.100 enrolment_style Ealse 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 0.007 -0.005 -0.003 -0.002 -0.001 -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



