A: Datasheet

Algorithm: tevian_5

Developer: Tevian

Submission Date: 2018_10_30

Template size: 2048 bytes

Template time (2.5 percentile): 368 msec

Template time (median): 405 msec

Template time (97.5 percentile): 611 msec

Investigation:

Frontal mugshot ranking 99 (out of 259) -- FNIR(1600000, 0, 1) = 0.0073 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 102 (out of 221) -- FNIR(1600000, 0, 1) = 0.0282 vs. lowest 0.0062 from sensetime_005

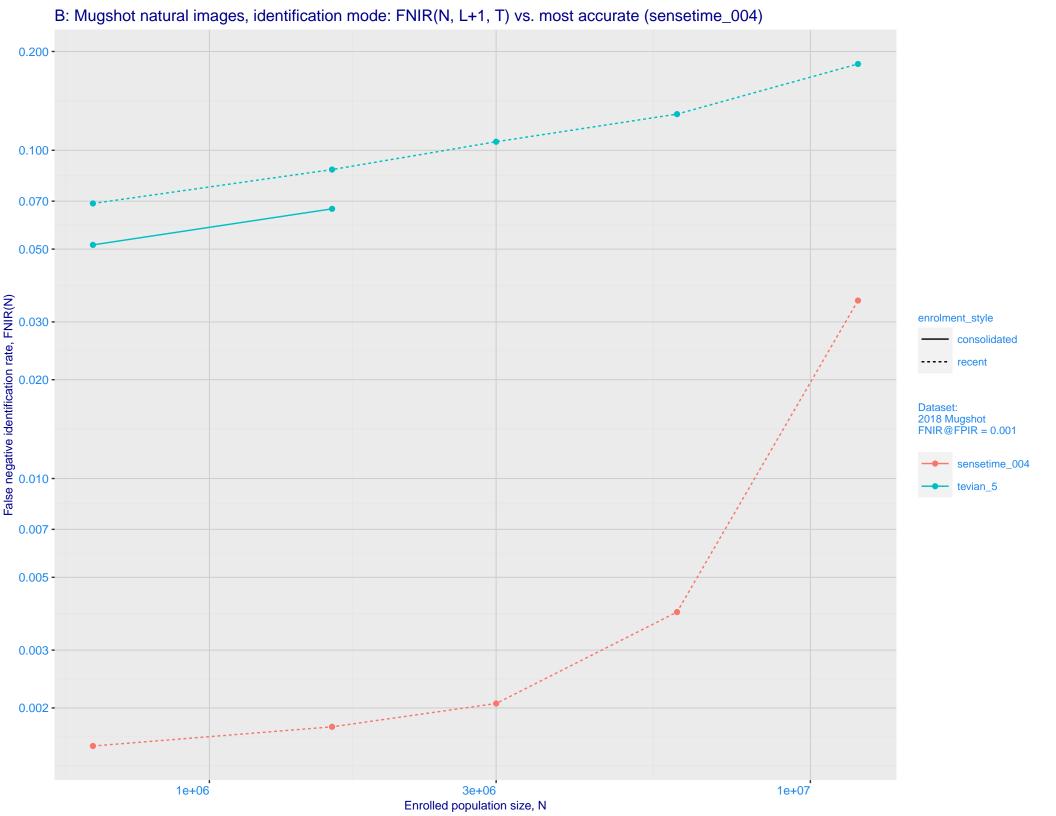
Mugshot profile ranking 37 (out of 190) -- FNIR(1600000, 0, 1) = 0.4667 vs. lowest 0.0591 from sensetime_005

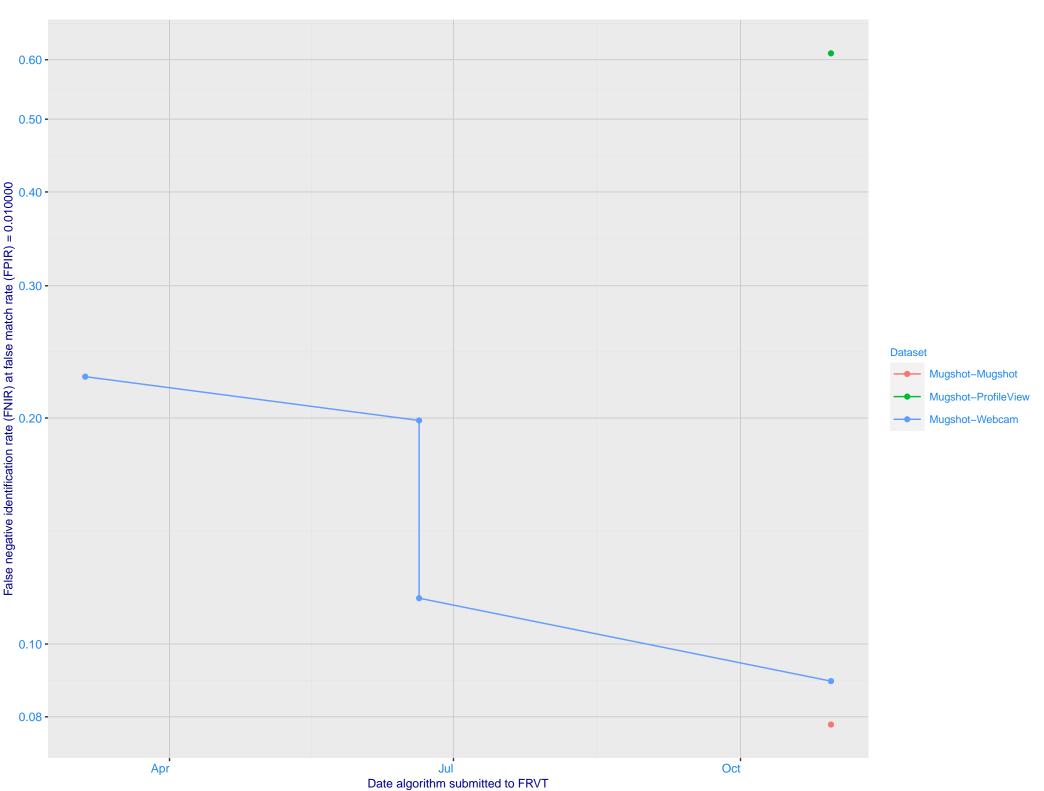
Identification:

Frontal mugshot ranking 117 (out of 259) -- FNIR(1600000, T, L+1) = 0.0873, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 96 (out of 219) -- FNIR(1600000, T, L+1) = 0.1438, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

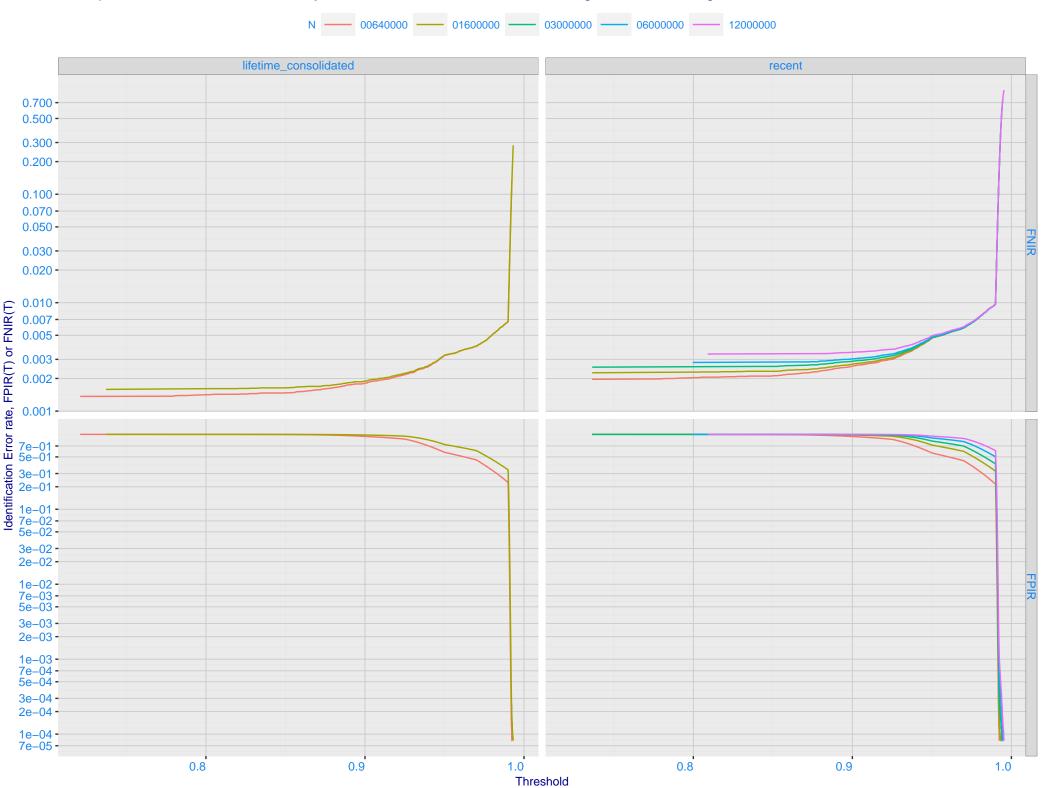
Mugshot profile ranking 37 (out of 189) -- FNIR(1600000, T, L+1) = 0.9619, FPIR=0.001000 vs. lowest 0.1733 from sensetime_005



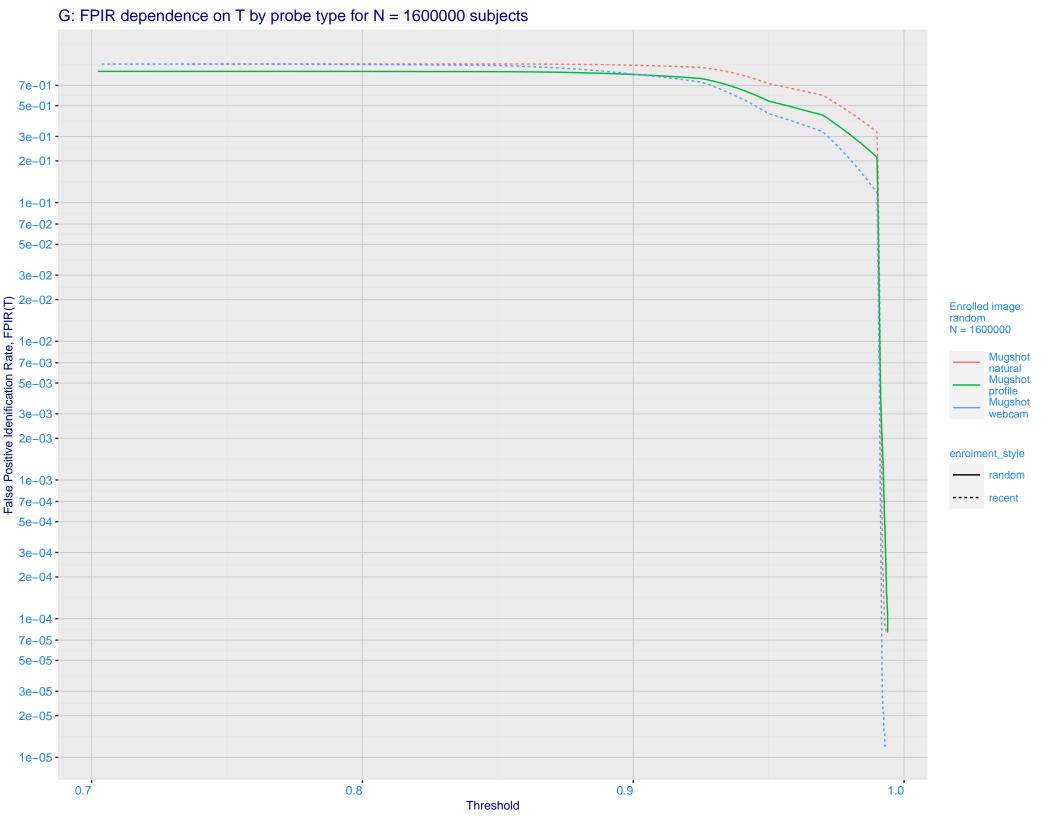


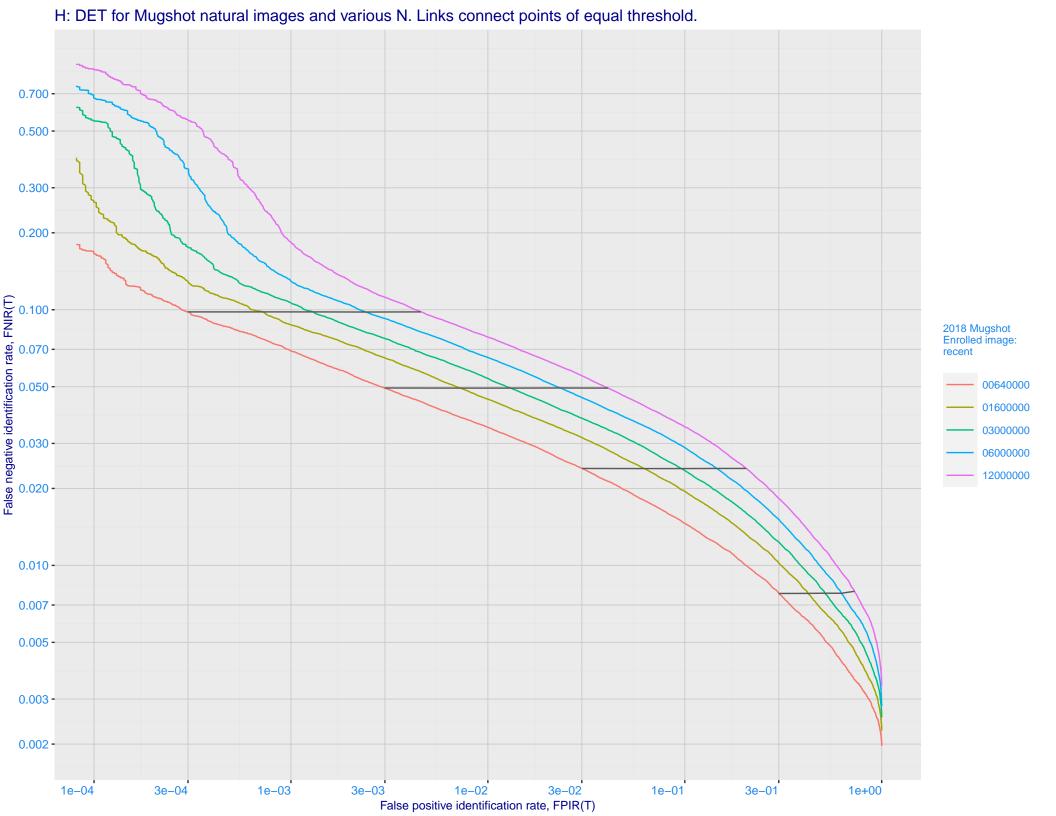
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration** Mugshot **Immigration** visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.0001 - 0.500 - 0.500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

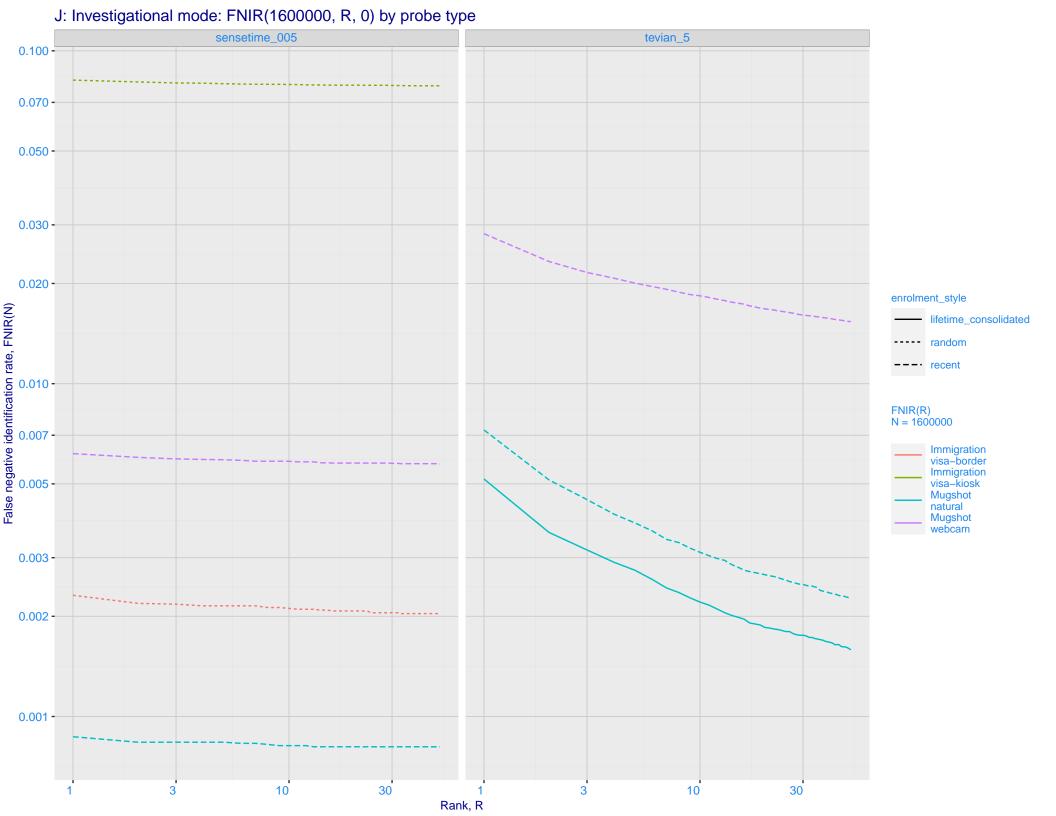


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -7e-02 - 5e-02 -**Enrolled images:** recent N = 1600000 % 3e-02 -2e-02 -1e-02 -Mugshot natural Mugshot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

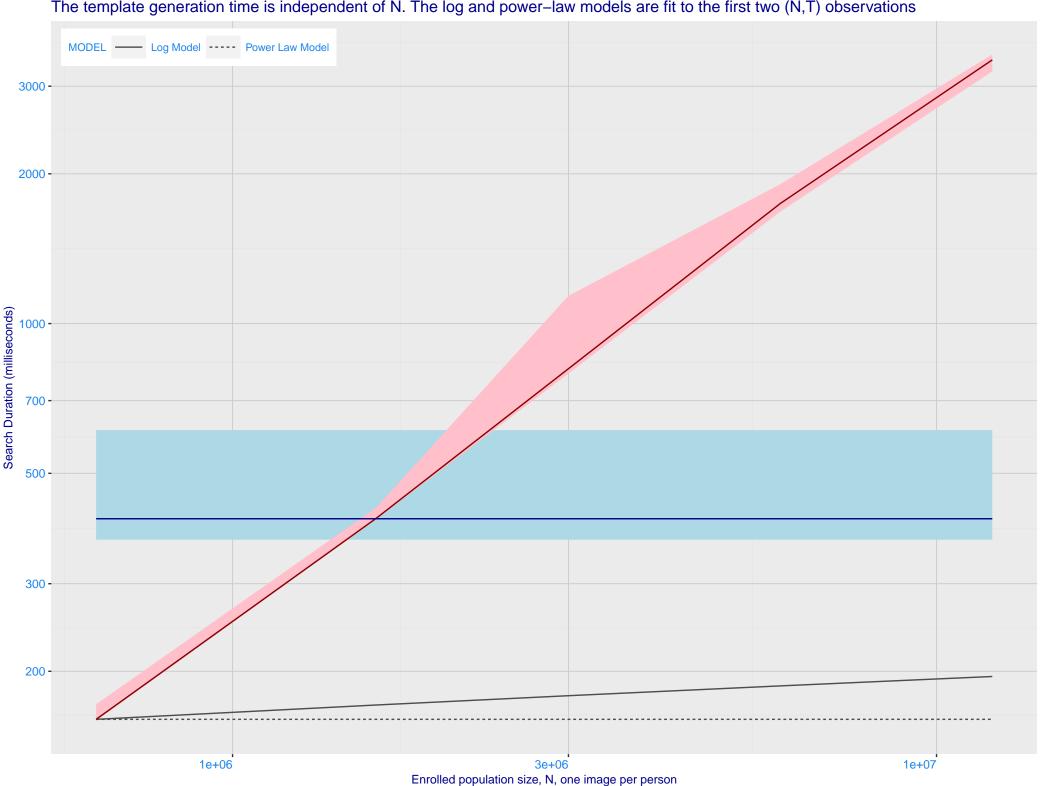




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.100 0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -Palse negative identification rate, FNIR(N) 0.002 - 0.001 - 0.000 - 0.050 - 0.050 - 0.030 - 0. enrolment_style consolidated ---- random --- recent Mugshot webcam Mugshot natural FNIR@Rank = 1 sensetime_005 tevian_5 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



