A: Datasheet

Algorithm: yitu_4

Developer: Shanghai Yitu Technology

Submission Date: 2018_10_30

Template size: 2070 bytes

Template time (2.5 percentile): 865 msec

Template time (median): 898 msec

Template time (97.5 percentile): 986 msec

Investigation:

Frontal mugshot ranking 8 (out of 265) -- FNIR(1600000, 0, 1) = 0.0013 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 9 (out of 227) -- FNIR(1600000, 0, 1) = 0.0083 vs. lowest 0.0062 from sensetime_005

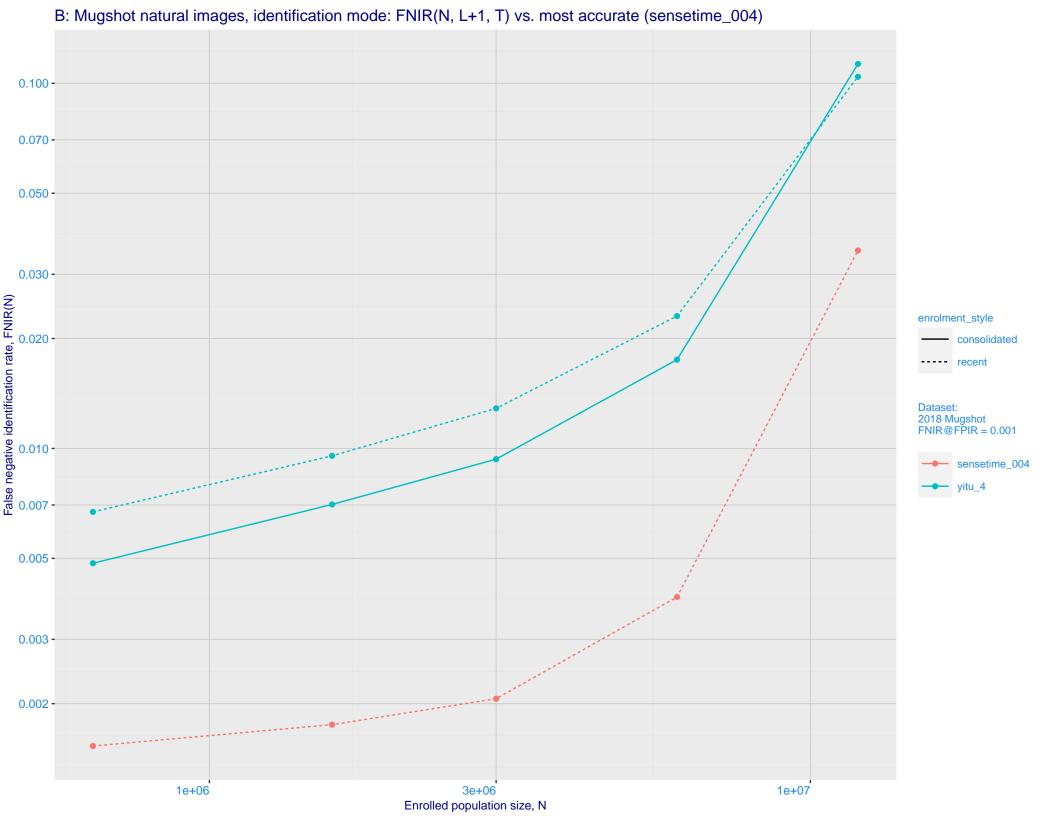
Mugshot profile ranking 109 (out of 196) -- FNIR(1600000, 0, 1) = 0.8660 vs. lowest 0.0591 from sensetime_005

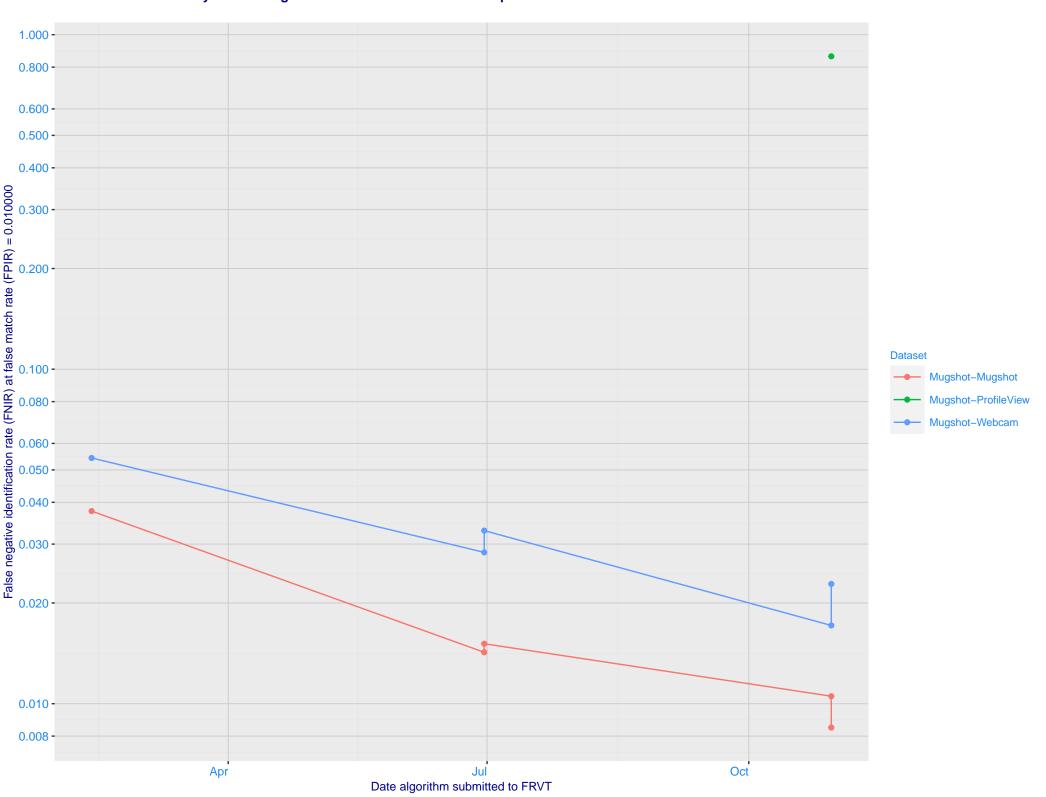
Identification:

Frontal mugshot ranking 15 (out of 265) -- FNIR(1600000, T, L+1) = 0.0095, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 12 (out of 225) -- FNIR(1600000, T, L+1) = 0.0271, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 36 (out of 195) -- FNIR(1600000, T, L+1) = 0.9365, FPIR=0.001000 vs. lowest 0.1331 from hr_000

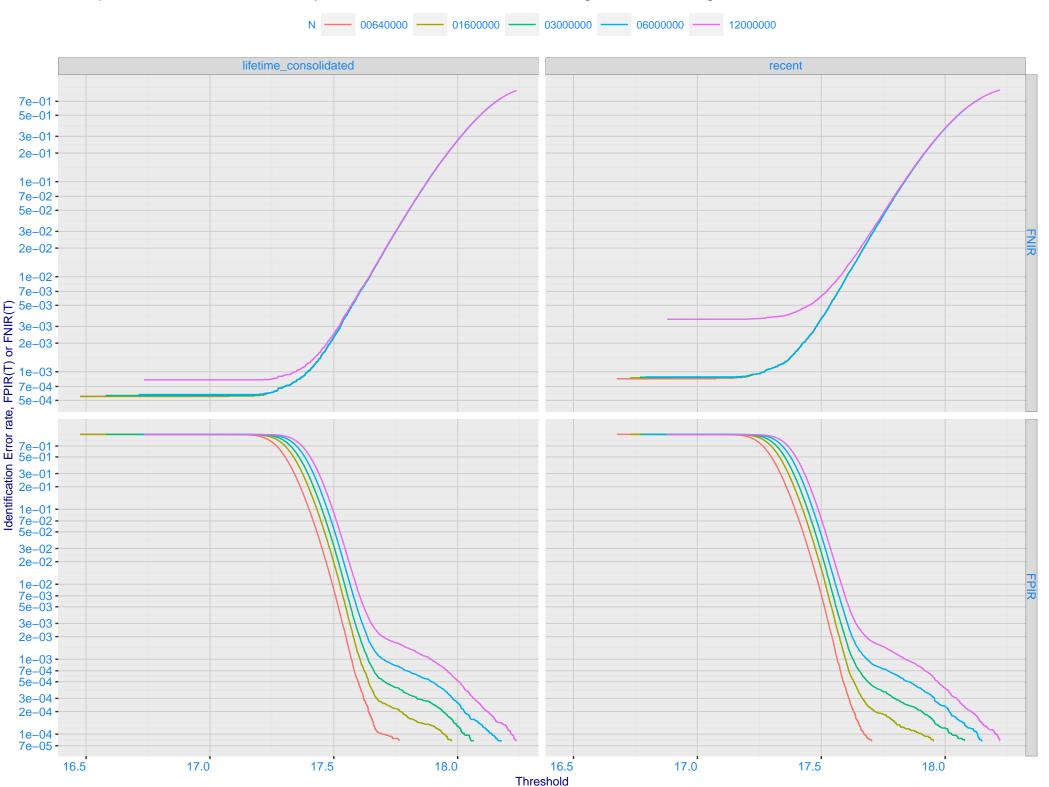




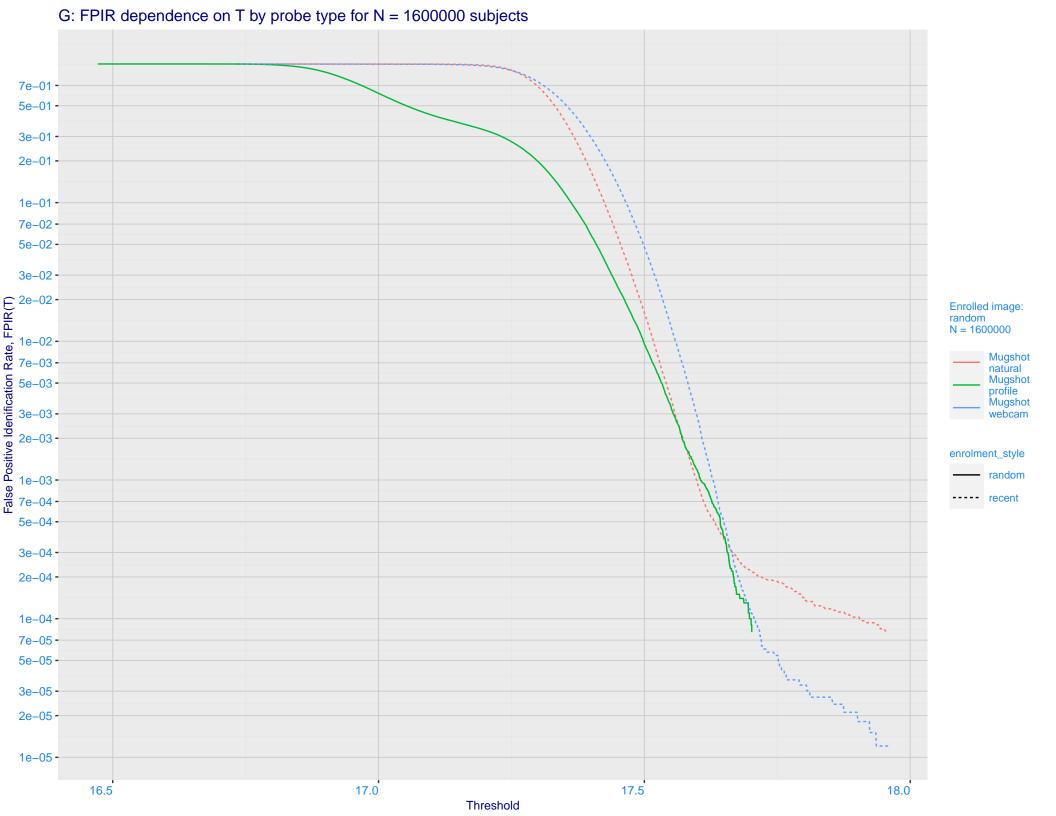
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration Immigration** Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Ealse negative identification rate, FNIR(T) 0.003 - 0.001 - 0.700 - 0.500 - 0.200 - 0.100 - 0. enrolment_style consolidated-ONE-MATE random-ONE-MATE recent-ONE-MATE unconsolidated-ALL-MATES unconsolidated-ANY-MATE 0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -

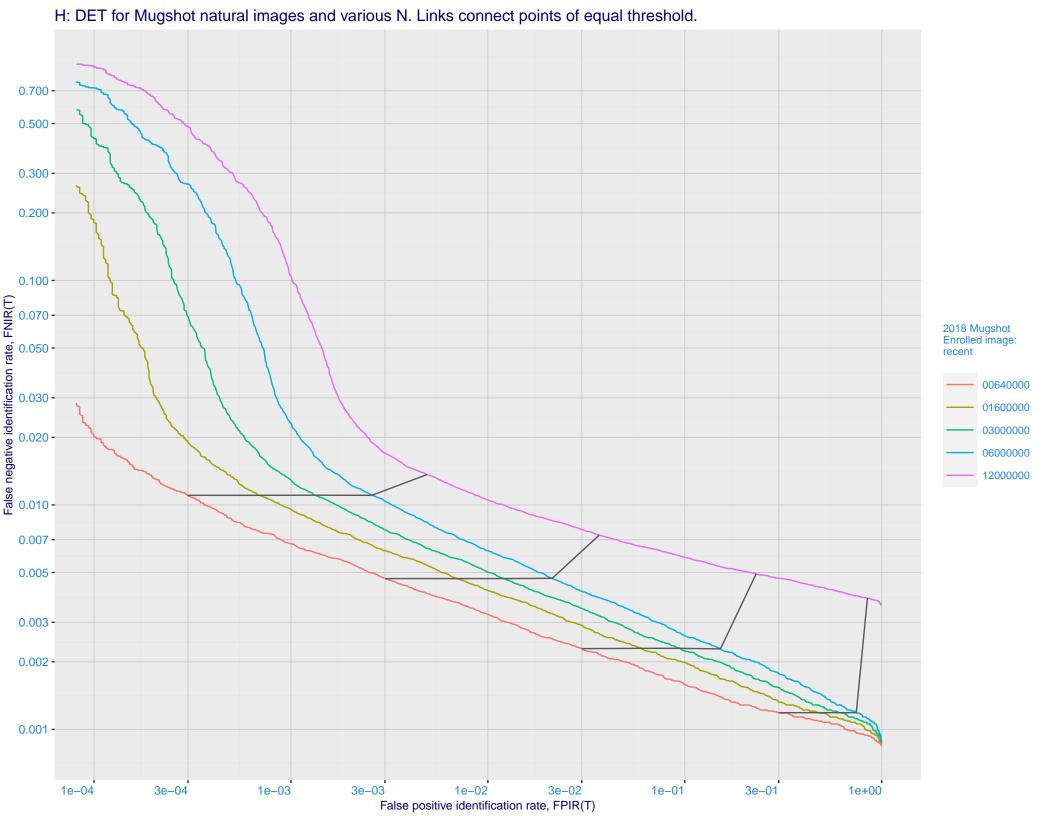
False positive identification rate, FPIR(T)

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

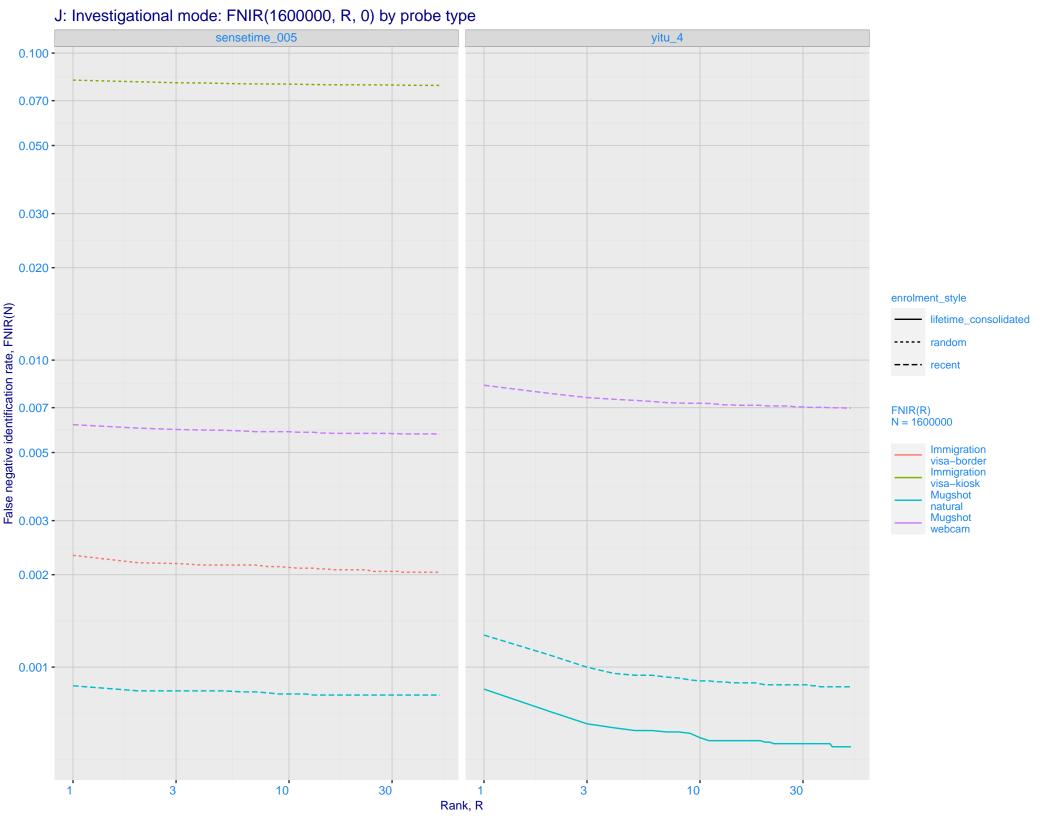


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -7e-02 -5e-02 -3e-02 -3e-02 -1e-02 -**Enrolled images:** recent N = 1600000 Mugshot natural Mugshot webcam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

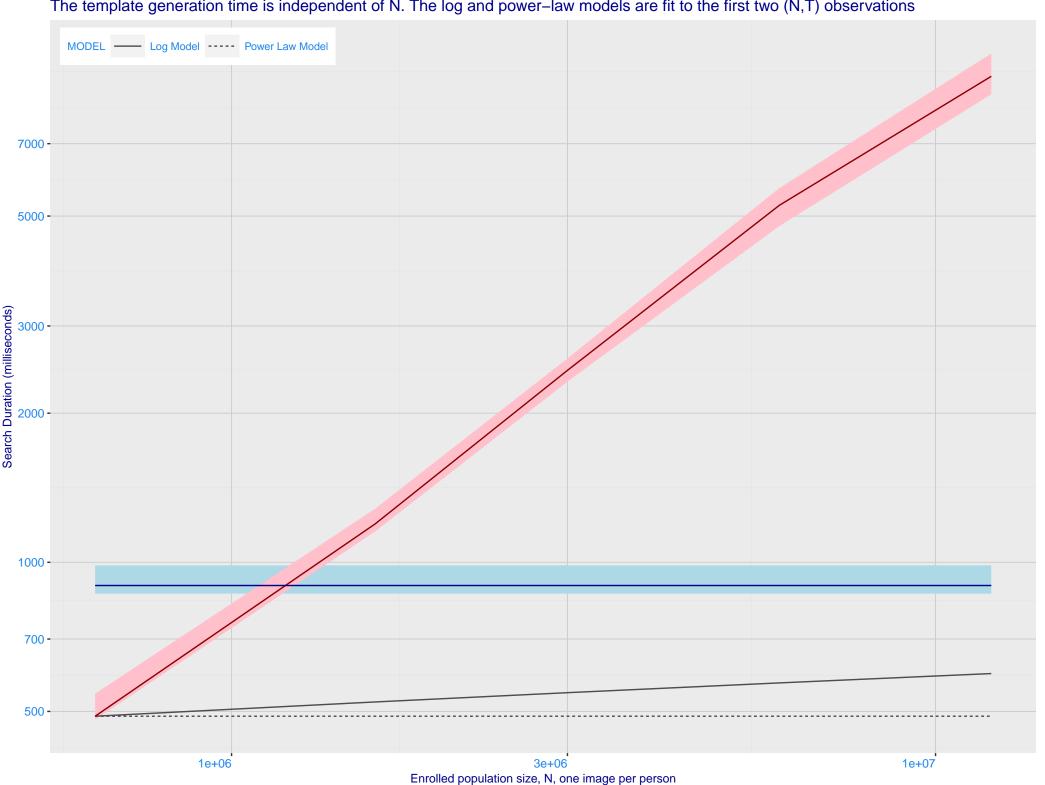




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -Ealse negative identification rate, FNIR(N) - 0.001 - 0.100 - 0.050 - 0.050 - 0.030 enrolment_style consolidated ---- random --- recent Mugshot natural Mugshot webcam FNIR@Rank = 1 sensetime_005 yitu_4 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



