A: Datasheet

Algorithm: shaman_4

Developer: Shaman Software

Submission Date: 2018_06_30

Template size: 2048 bytes

Template time (2.5 percentile): 634 msec

Template time (median): 639 msec

Template time (97.5 percentile): 704 msec

Investigation:

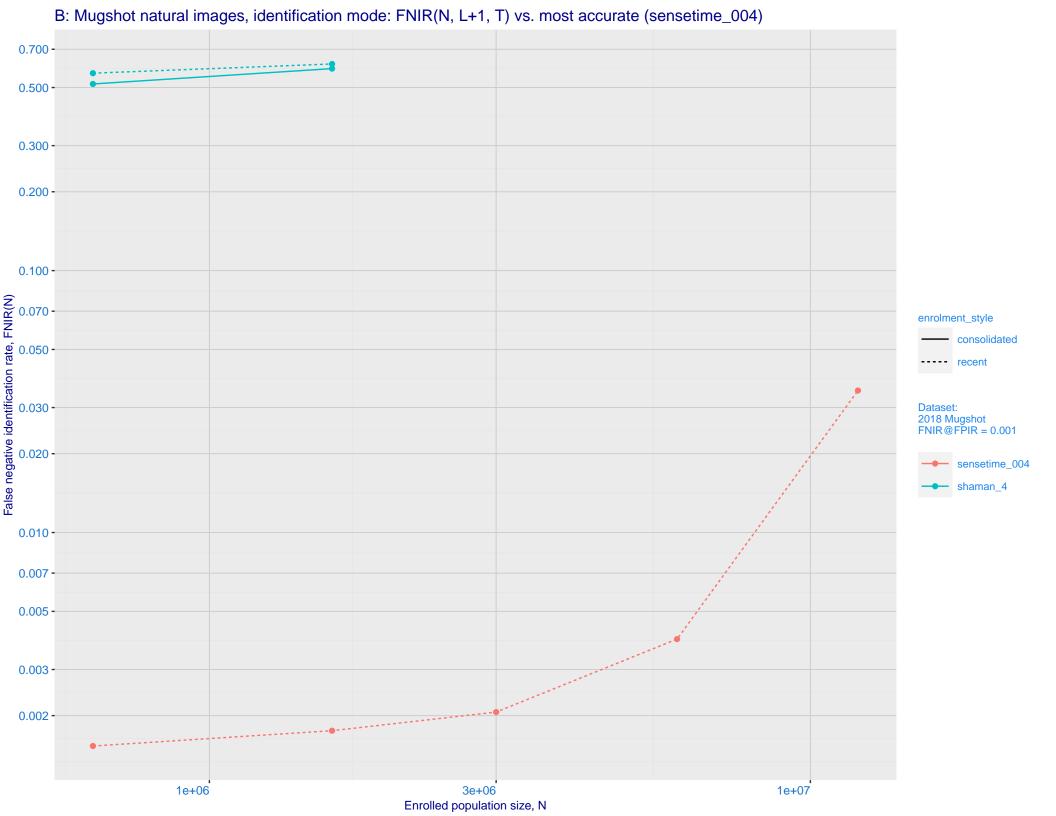
Frontal mugshot ranking 256 (out of 279) -- FNIR(1600000, 0, 1) = 0.2221 vs. lowest 0.0009 from sensetime_005

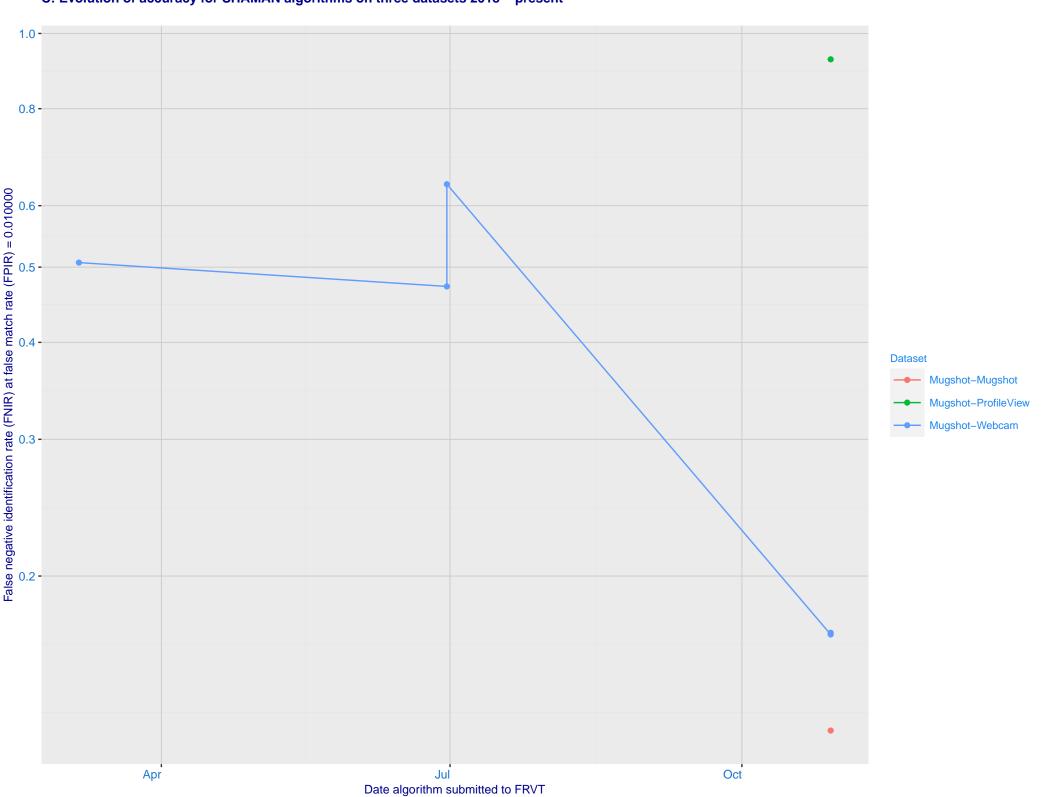
Mugshot webcam ranking 214 (out of 241) -- FNIR(1600000, 0, 1) = 0.3191 vs. lowest 0.0062 from sensetime_005

Identification:

Frontal mugshot ranking 241 (out of 279) -- FNIR(1600000, T, L+1) = 0.6150, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 210 (out of 236) -- FNIR(1600000, T, L+1) = 0.7535, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

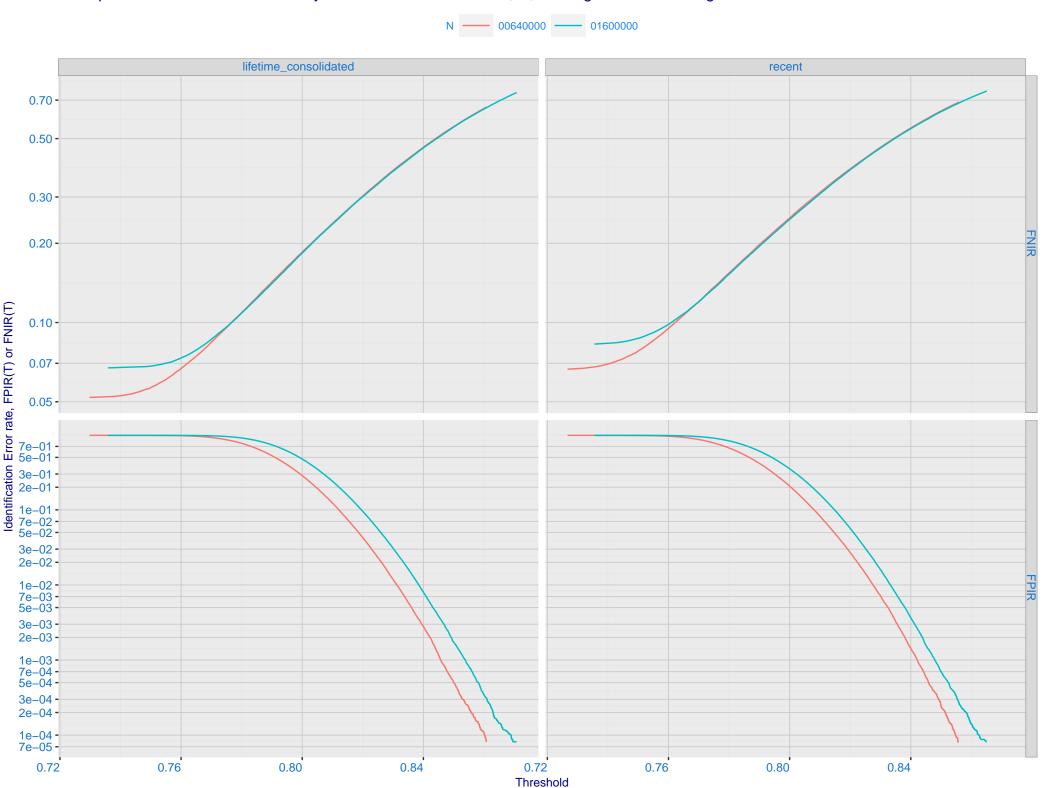




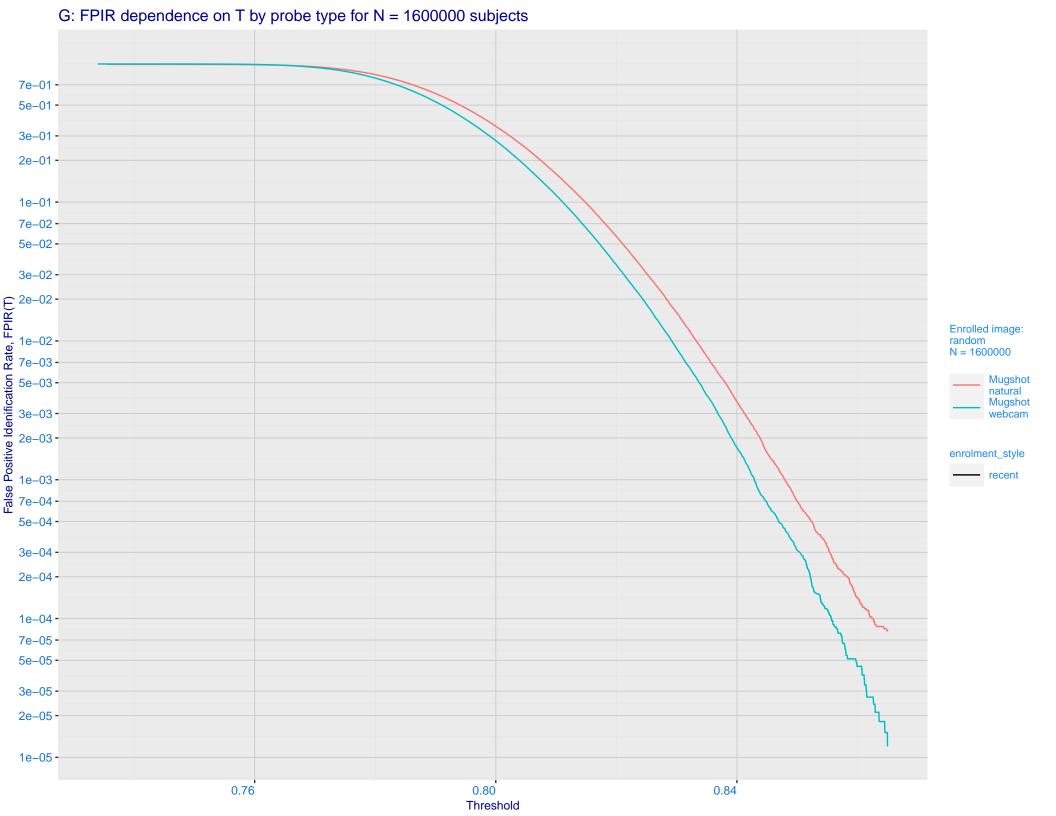
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration** Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.002 - 0.001 - 0.500 - 0.500 - 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 -

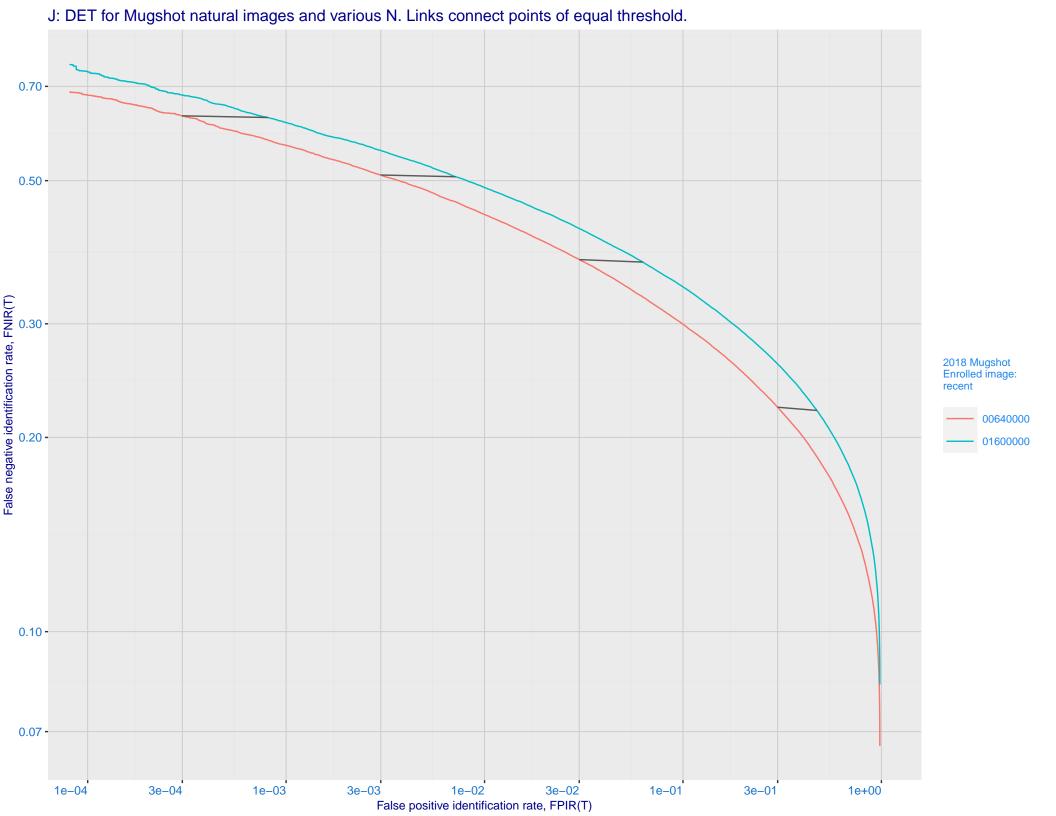
False positive identification rate, FPIR(T)

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

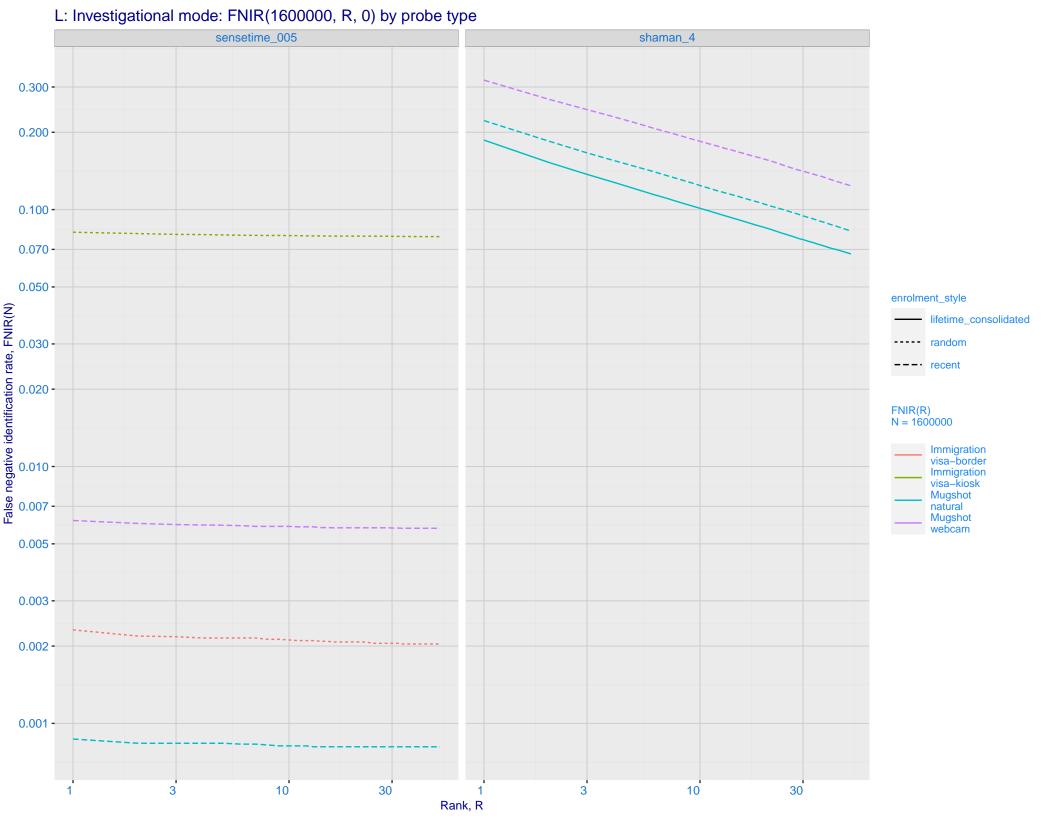


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -7e-02 - 5e-02 - 3e-02 - 2e-02 - 1e-02 - 7-00 **Enrolled images:** recent N = 1600000 Mugshot natural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





K: 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 - 0.100 - 0.700 - 0. enrolment_style consolidated ---- random --- recent Mugshot Mugshot webcam natural FNIR@Rank = 1 sensetime_005 shaman_4 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



M: 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 - Log Model ---- Power Law Model 700 -500 -Search Duration (milliseconds) 200 -100 -7e+05 8e+05 1e+06 Enrolled population size, N, one image per person

Q: Identification FNIR(N, T, L+1) and Investigational FNIR(N, 0, R) under ageing



