A: Datasheet

Algorithm: shaman_2

Developer: Shaman Software

Submission Date: 2018_02_12

Template size: 8192 bytes

Template time (2.5 percentile): 562 msec

Template time (median): 565 msec

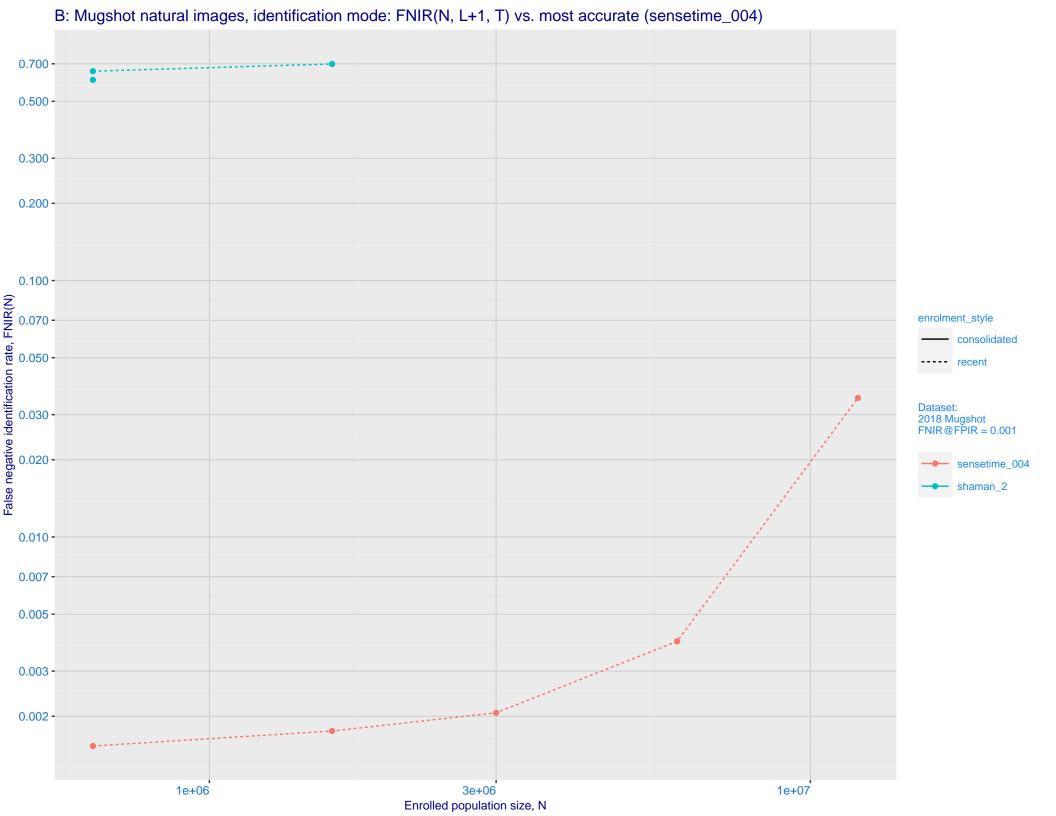
Template time (97.5 percentile): 585 msec

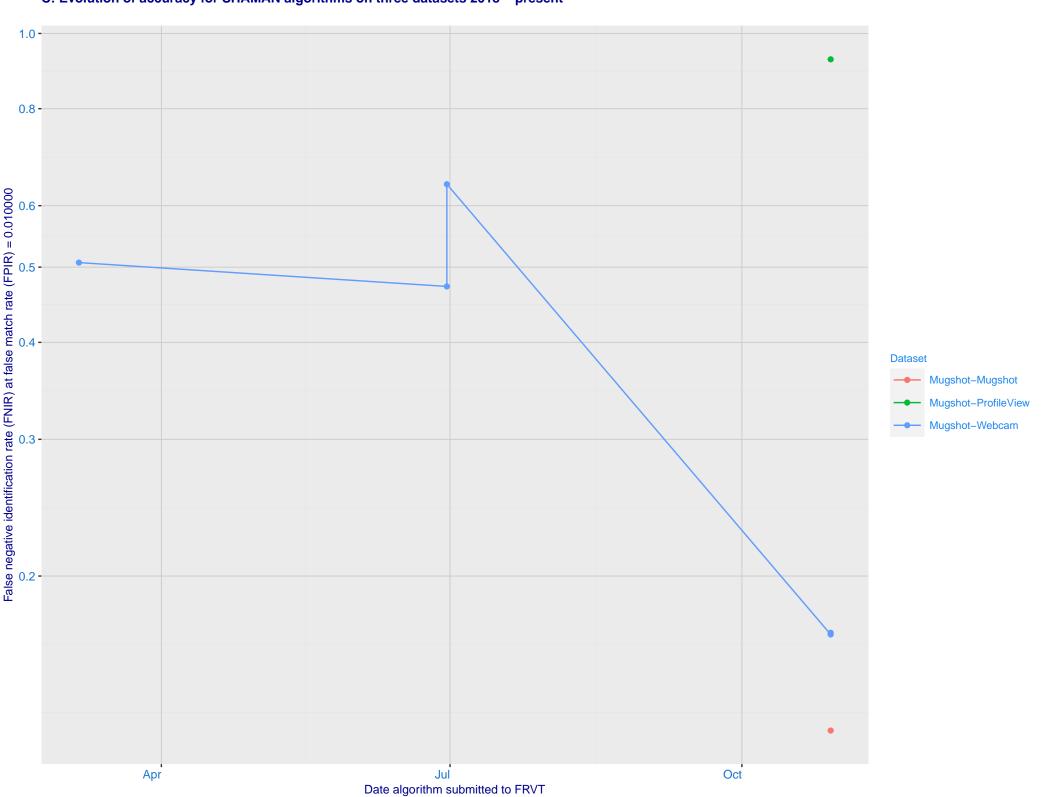
Investigation:

Frontal mugshot ranking 260 (out of 279) — FNIR(1600000, 0, 1) = 0.2600 vs. lowest 0.0009 from sensetime_005

Identification:

Frontal mugshot ranking 250 (out of 279) — FNIR(1600000, T, L+1) = 0.6990, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004





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 sensetime 004 0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.000 - 0.500 - 0.200 - 0. enrolment_style random-ONE-MATE recent-ONE-MATE 0.100 -0.070 -0.050 shaman 0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -

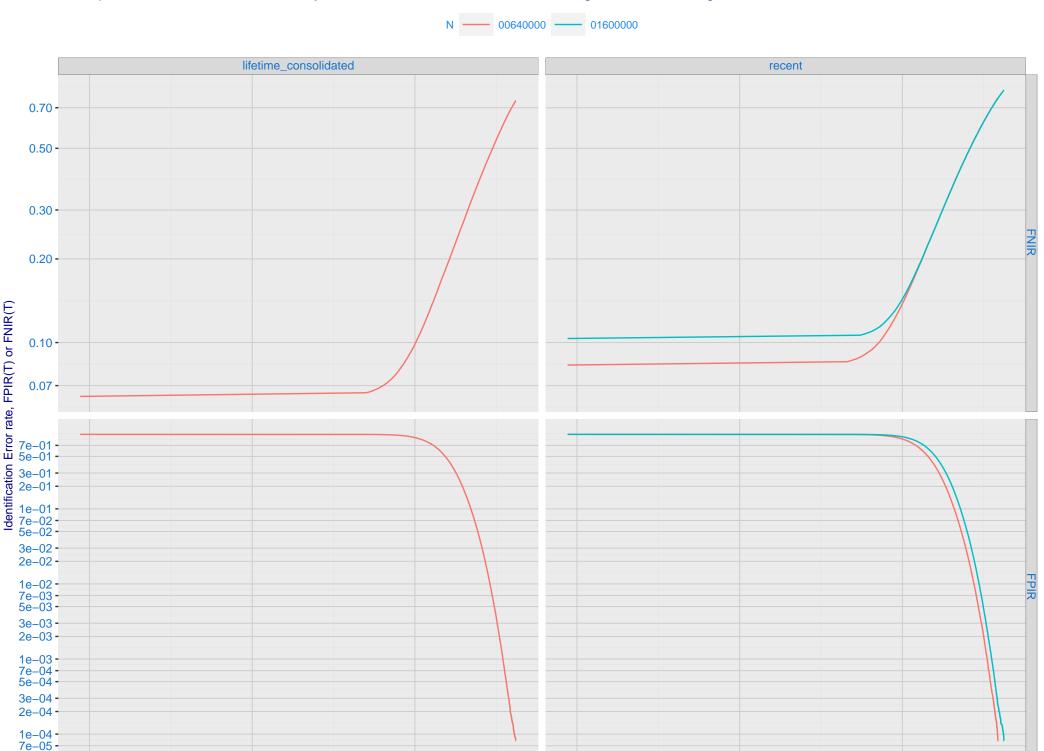
False positive identification rate, FPIR(T)

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

0.9

0.7

8.0



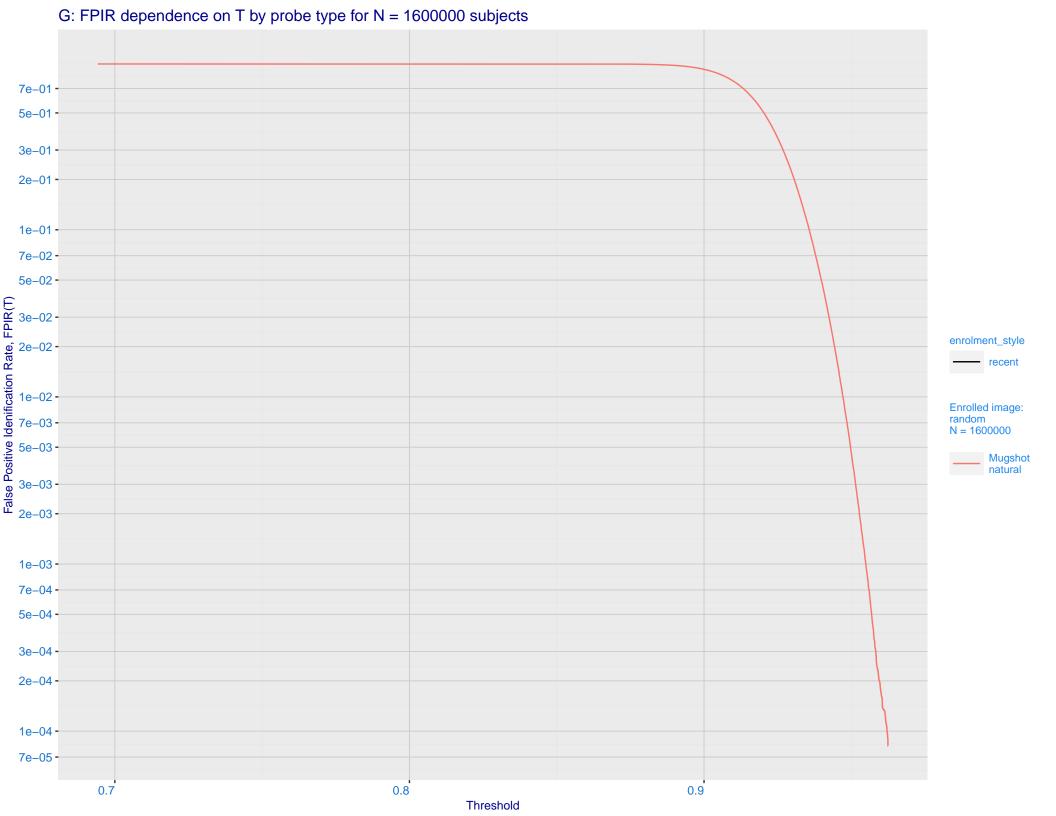
0.7

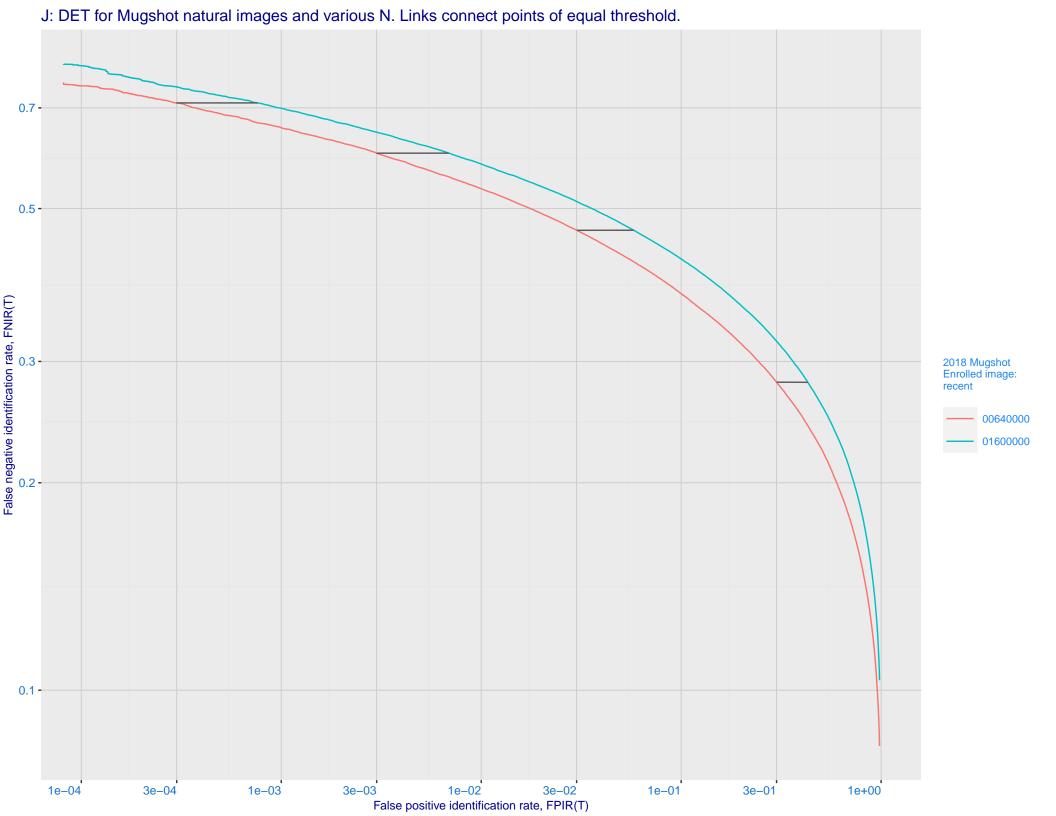
Threshold

0.8

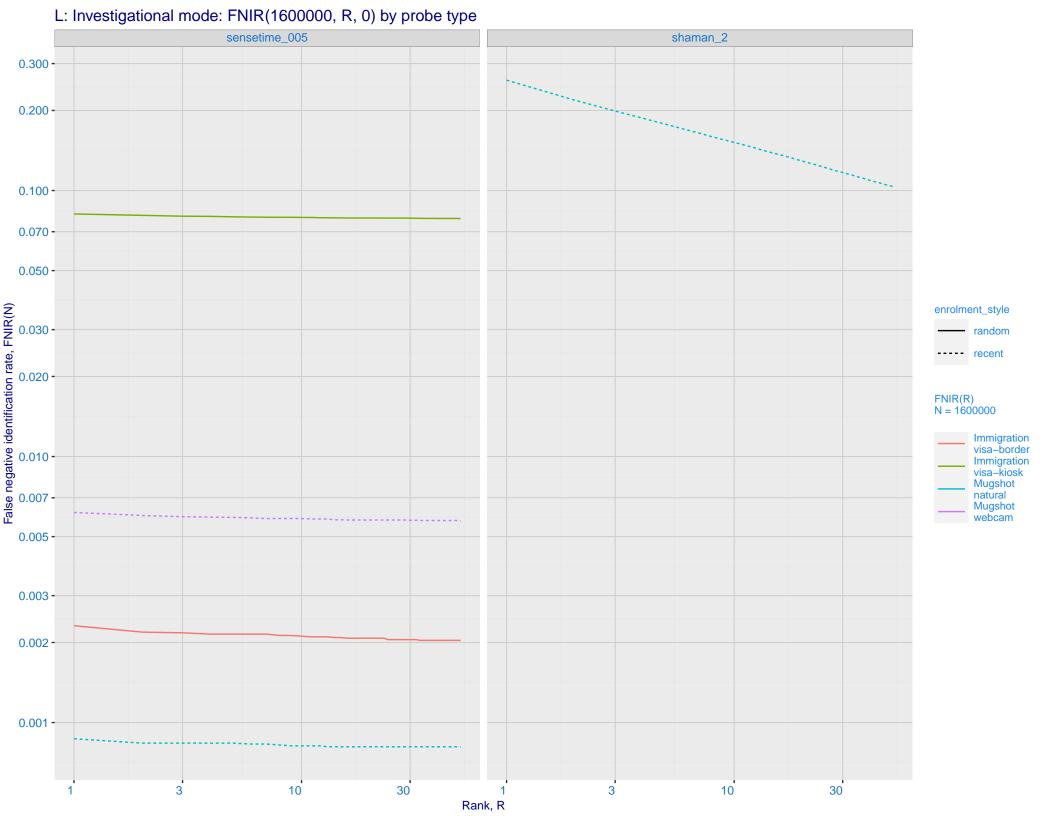
0.9

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 -Selectivity, SEL(T) 70-02 - 7 Enrolled images: recent N = 1600000 Mugshot natural 2e-02 -1e-02 -7e-03 -5e-03 -3e-03 -2e-03 -1e-03 -7e-04 -5e-04 -3e-04 -2e-04 -1e-04 -7e-05 -5e-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) 0.002 - 0.001 - 0.300 - 0.200 - 0.100 - 0.070 - 0. • enrolment_style consolidated ---- random --- recent Mugshot Mugshot webcam natural FNIR@Rank = 1 sensetime_005 shaman_2 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 -Search Duration (milliseconds) 300 -

1e+06

Enrolled population size, N, one image per person

7e+05

8e+05

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



