A: Datasheet

Algorithm: innovatrics_1

Developer: Innovatrics

Submission Date: 2018_02_16

Template size: 530 bytes

Template time (2.5 percentile): 299 msec

Template time (median): 316 msec

Template time (97.5 percentile): 345 msec

Investigation:

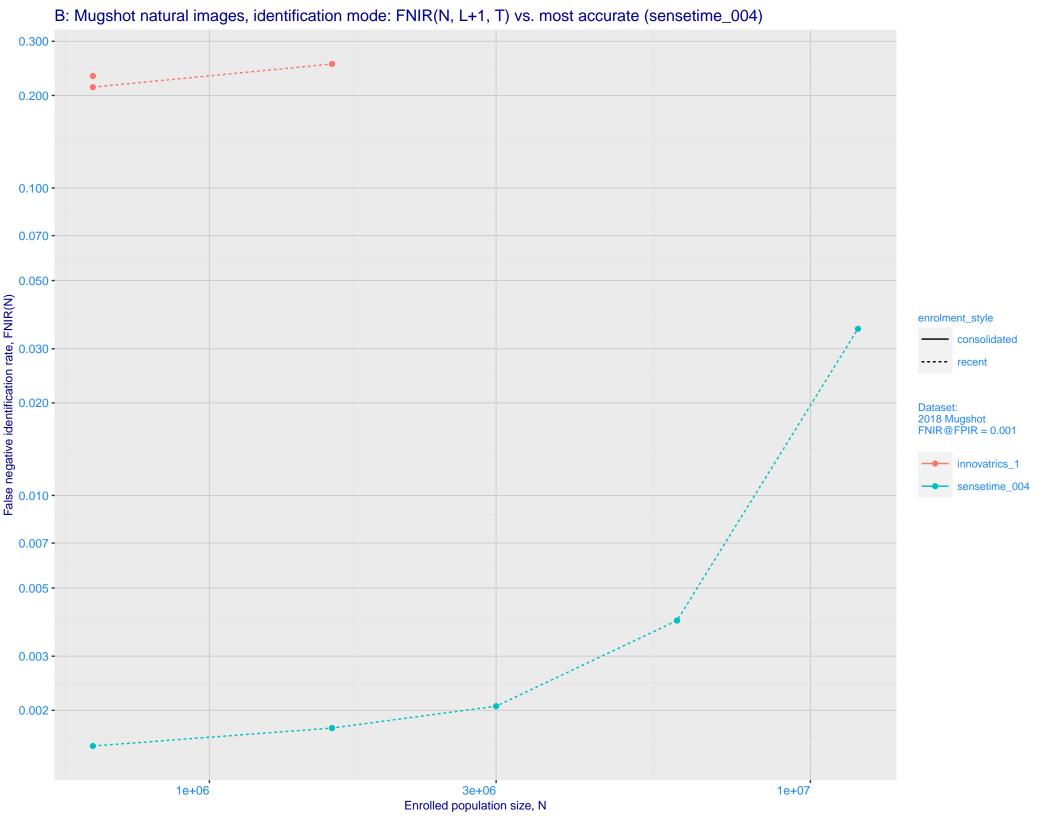
Frontal mugshot ranking 184 (out of 259) -- FNIR(1600000, 0, 1) = 0.0395 vs. lowest 0.0009 from sensetime_005

Mugshot profile ranking 150 (out of 190) -- FNIR(1600000, 0, 1) = 0.9644 vs. lowest 0.0591 from sensetime_005

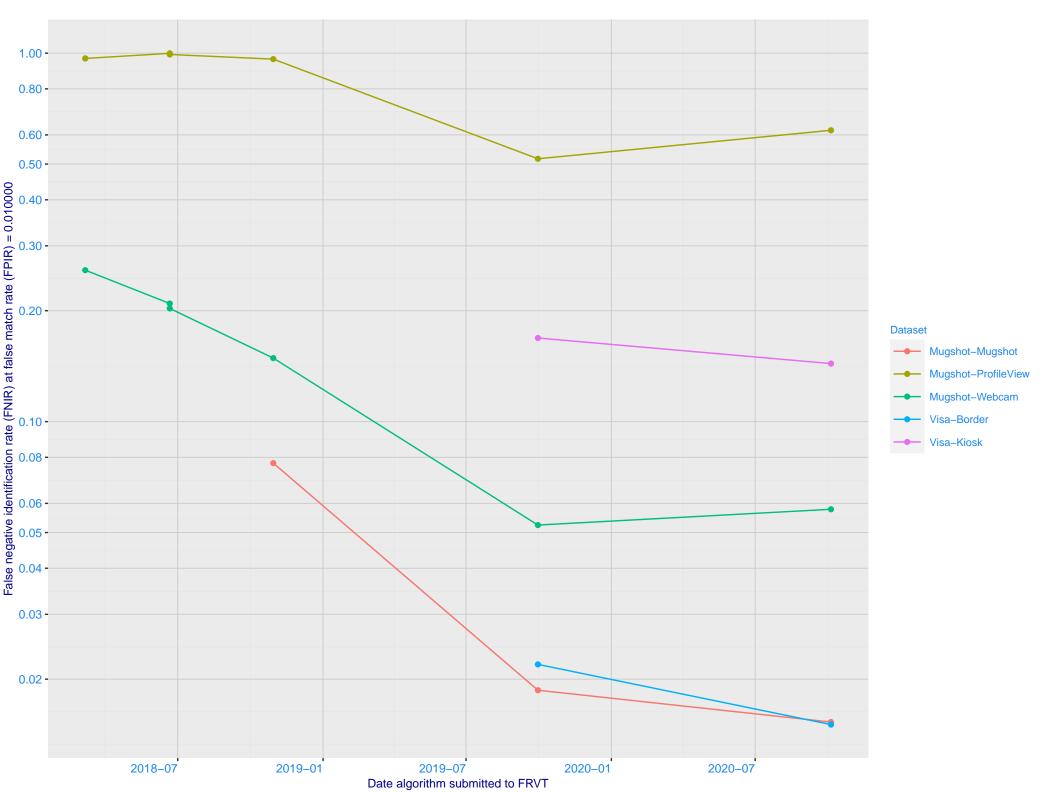
Identification:

Frontal mugshot ranking 180 (out of 259) -- FNIR(1600000, T, L+1) = 0.2532, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot profile ranking 60 (out of 189) -- FNIR(1600000, T, L+1) = 0.9828, FPIR=0.001000 vs. lowest 0.1733 from sensetime_005

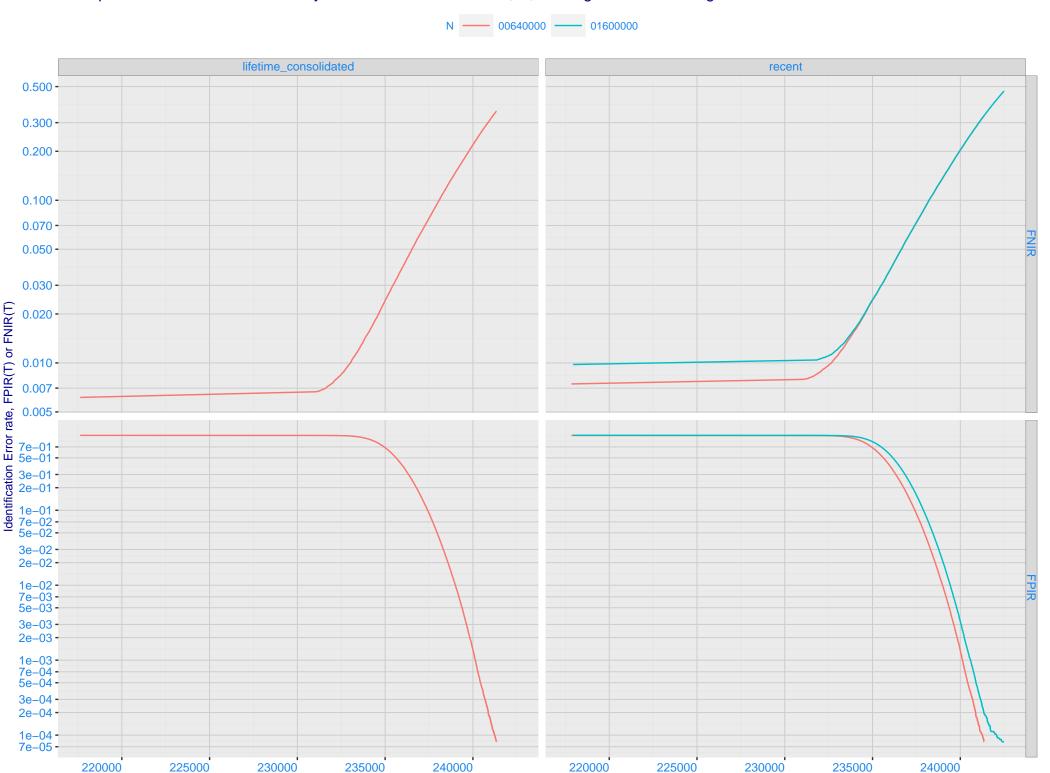


C: Evolution of accuracy for INNOVATRICS algorithms on three datasets 2018 – present



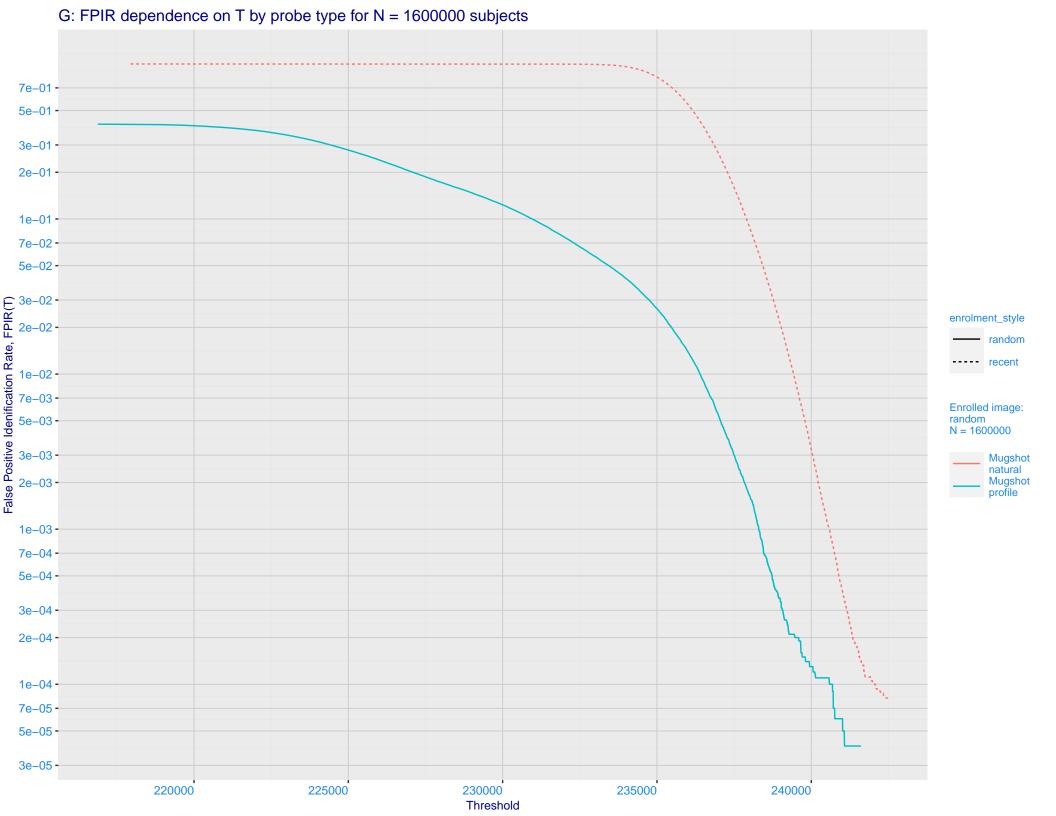
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.0001 - 0.700 - 0.500 - 0.200 - 0.100 - 0 enrolment_style random-ONE-MATE recent-ONE-MATE 0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -

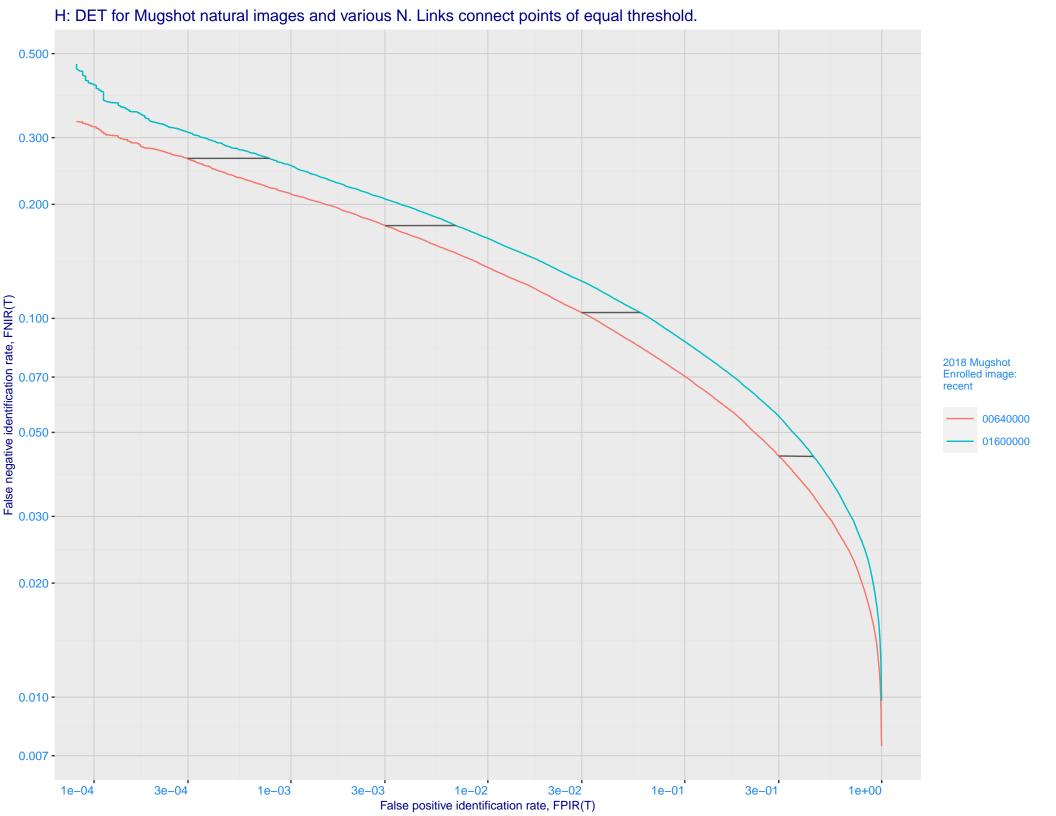
E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



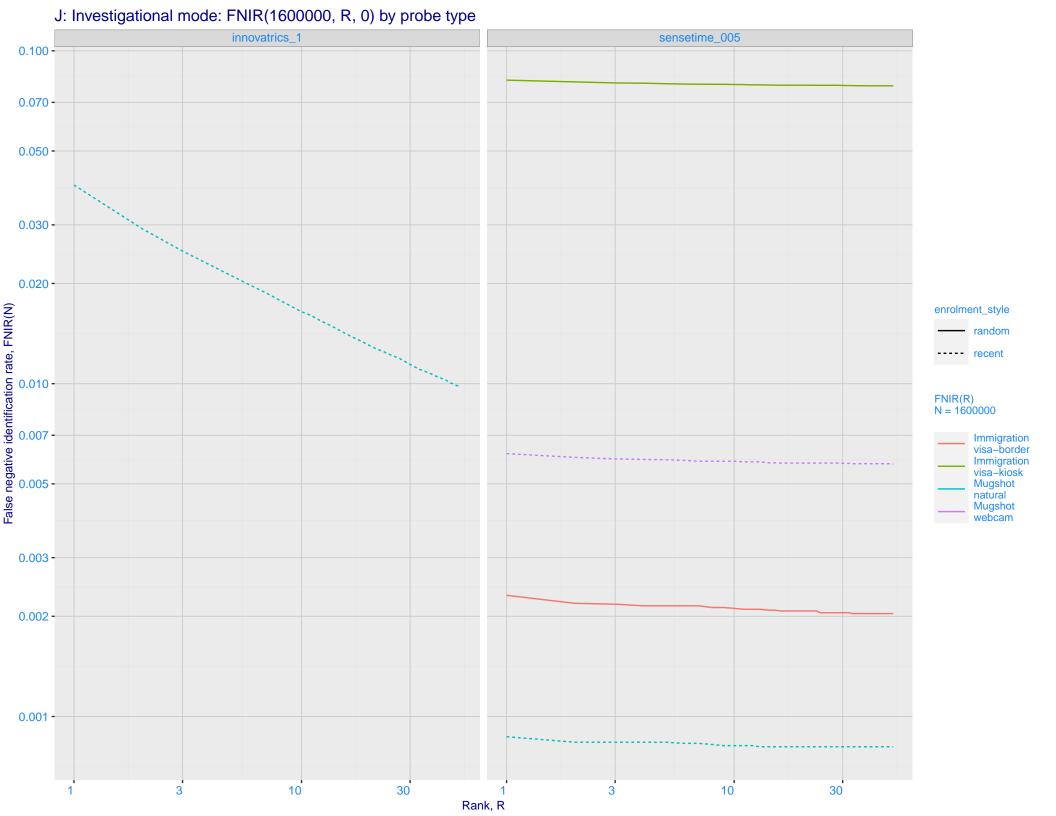
Threshold

F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 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 -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)





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) 0.002 - 0.001 - 0.000 - 0.050 - 0.030 - 0. enrolment_style consolidated ---- random --- recent Mugshot Mugshot webcam natural FNIR@Rank = 1 innovatrics_1 sensetime_005 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 700 -Log Model ---- Power Law Model 500 -300 -

1e+06

Enrolled population size, N, one image per person

Search Duration (milliseconds)

7e+05

8e+05

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



