A: Datasheet

Algorithm: aware_2

Developer: Aware

Submission Date: 2018_02_16

Template size: 2076 bytes

Template time (2.5 percentile): 848 msec

Template time (median): 909 msec

Template time (97.5 percentile): 989 msec

Investigation:

Frontal mugshot ranking 206 (out of 265) -- FNIR(1600000, 0, 1) = 0.0575 vs. lowest 0.0009 from sensetime_005

Mugshot profile ranking 177 (out of 196) -- FNIR(1600000, 0, 1) = 0.9768 vs. lowest 0.0591 from sensetime_005

Immigration visa-border ranking 111 (out of 148) -- FNIR(1600000, 0, 1) = 0.1489 vs. lowest 0.0013 from visionlabs_010

Immigration visa-kiosk ranking 110 (out of 145) -- FNIR(1600000, 0, 1) = 0.3947 vs. lowest 0.0568 from hr_000

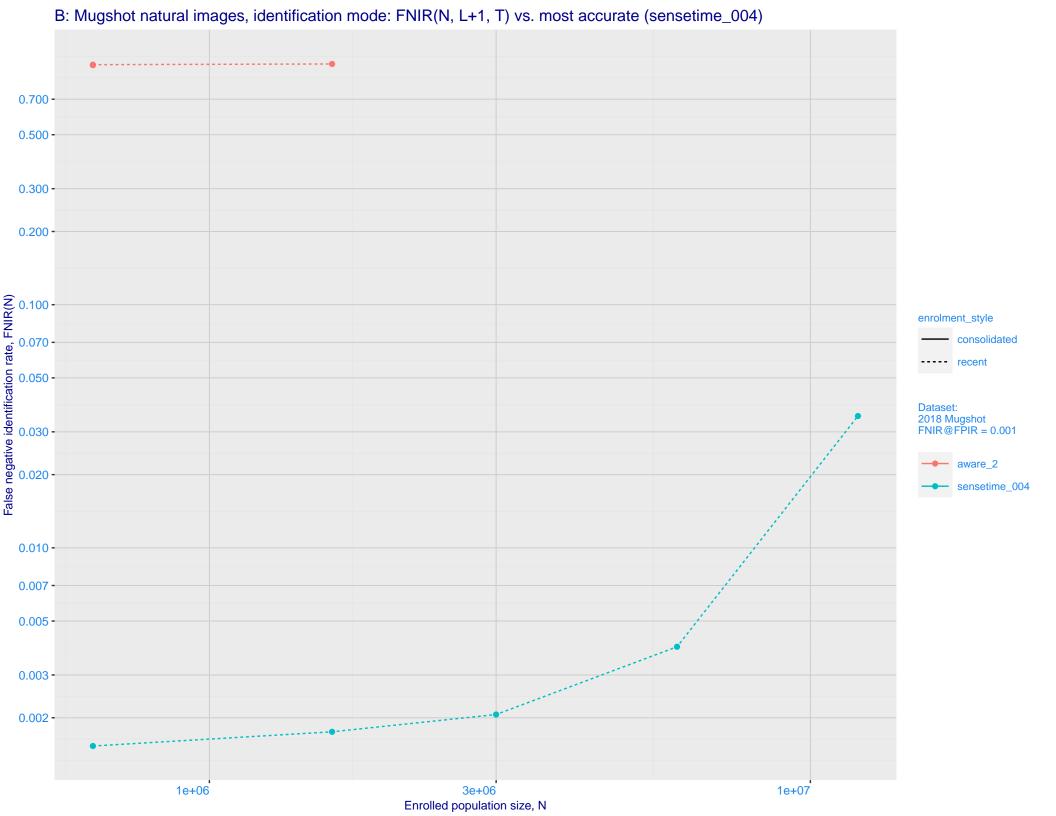
Identification:

Frontal mugshot ranking 255 (out of 265) -- FNIR(1600000, T, L+1) = 0.9772, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

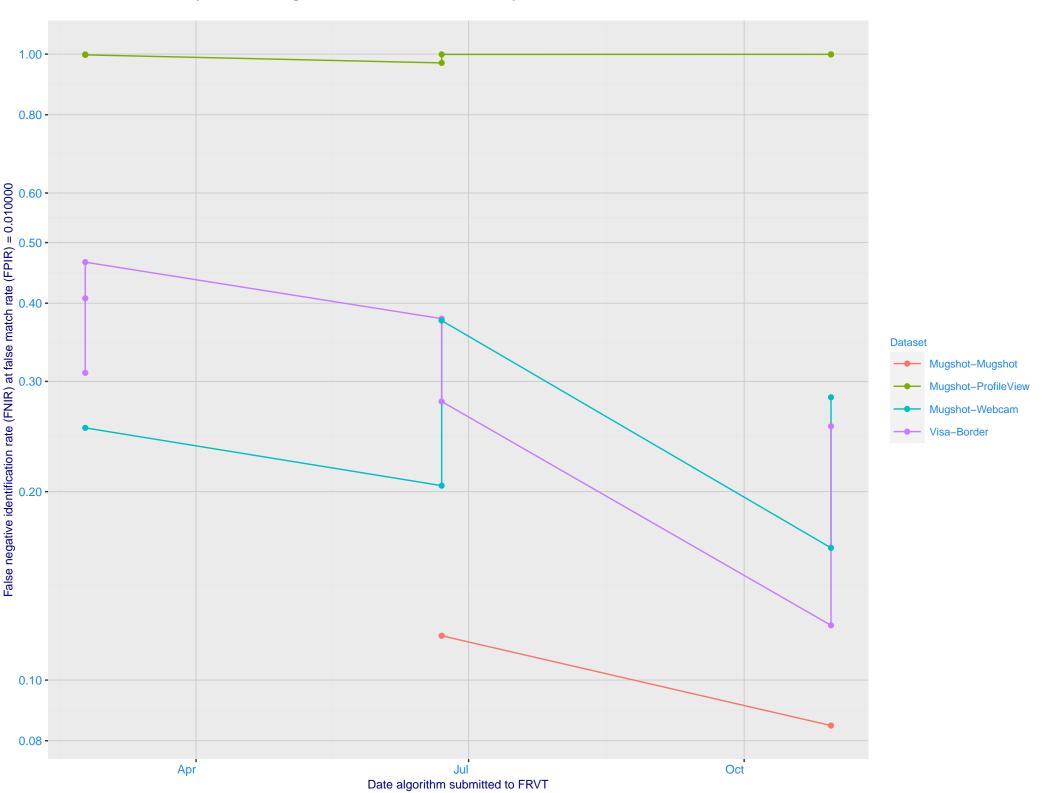
Mugshot profile ranking 176 (out of 195) -- FNIR(1600000, T, L+1) = 0.9999, FPIR=0.001000 vs. lowest 0.1331 from hr_000

Immigration visa-border ranking 117 (out of 146) -- FNIR(1600000, T, L+1) = 0.7433, FPIR=0.001000 vs. lowest 0.0049 from hr_000

Immigration visa-kiosk ranking 110 (out of 141) -- FNIR(1600000, T, L+1) = 0.9431, FPIR=0.001000 vs. lowest 0.0996 from hr_000

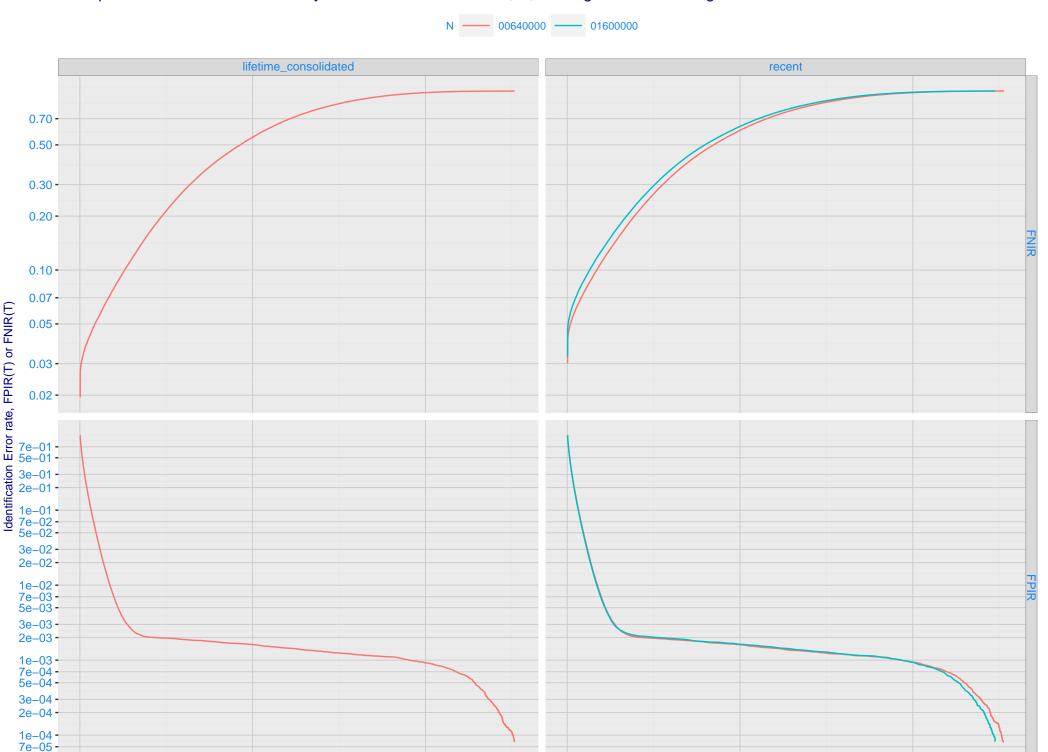


C: Evolution of accuracy for AWARE algorithms on three datasets 2018 – present



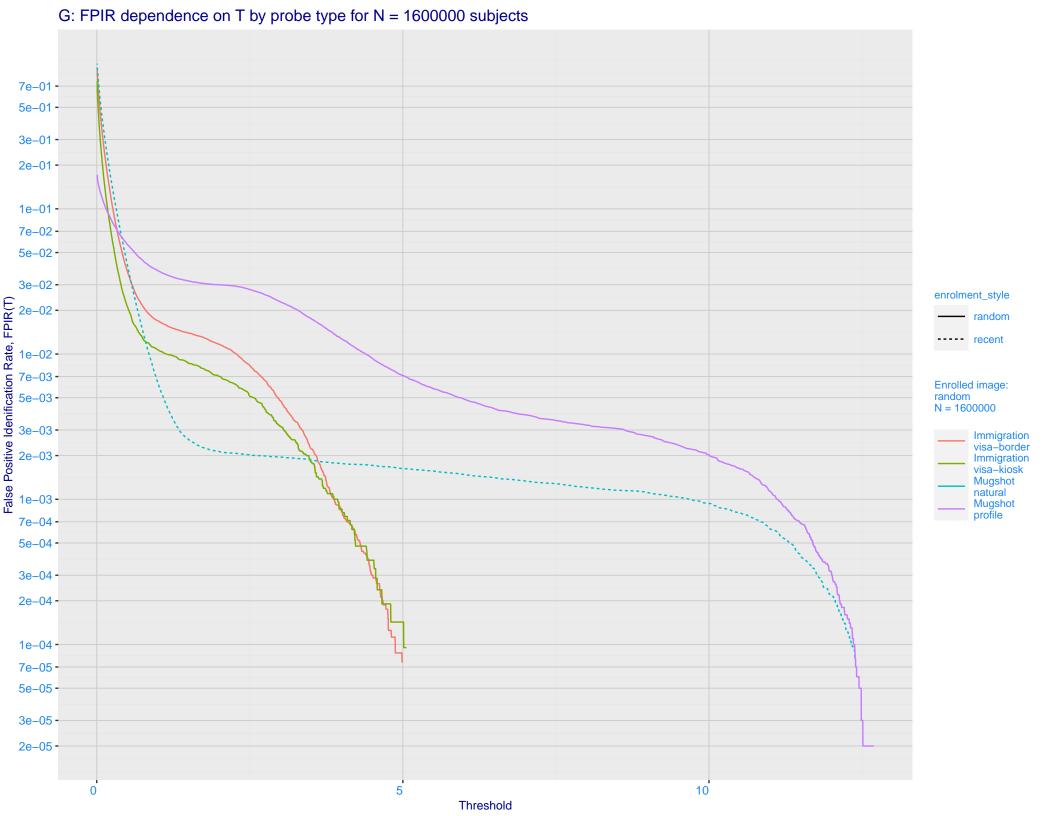
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 - 0.005 - 0.005 - 0.002 - 0.001 - 0.001 - 0.700 - 0.500 - 0.200 enrolment_style random-ONE-MATE 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



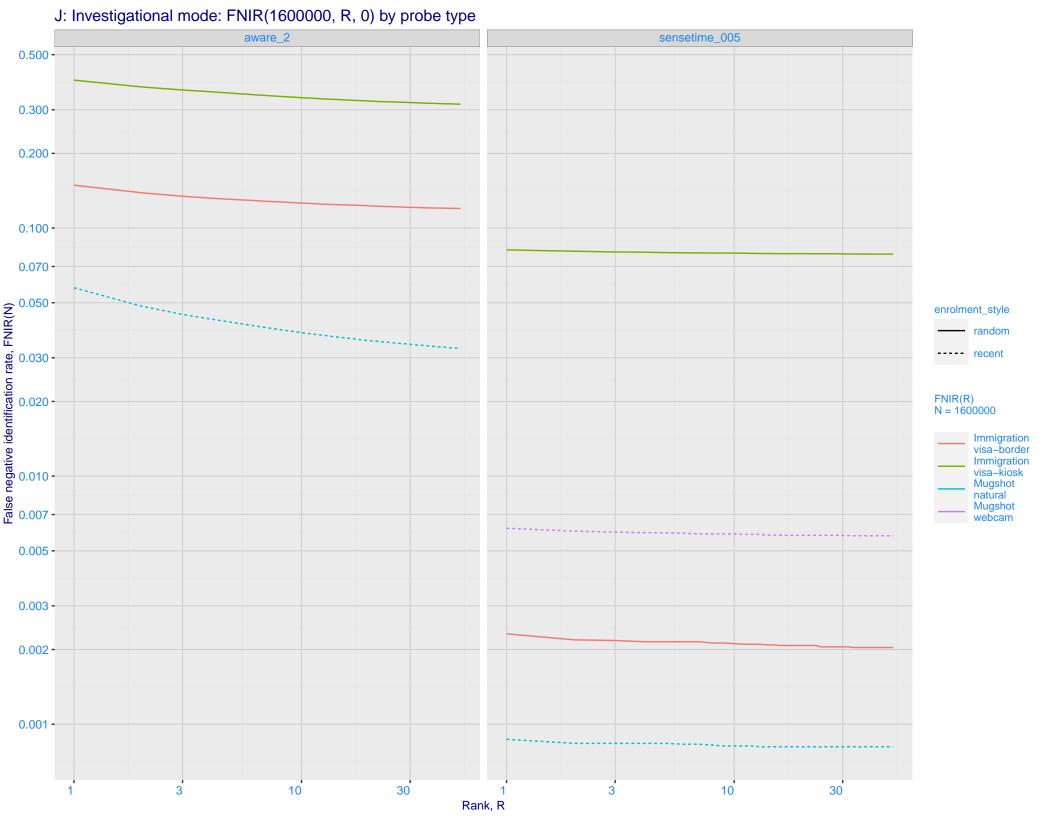
Threshold

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 -Selectivity. SEL(T) 2e-01 - 7 SEL(T) 3 SEL(T) 7 Enrolled images: recent N = 1600000 Mugshot natural 3e-02 -2e-02 -1e-02 -7e-03 -5e-03 -3e-03 -2e-03 -1e-03 -7e-04 -5e-04 -3e-04 -2e-04 -1e-04 -1e-04 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 False Positive Idenification Rate, FPIR(T)

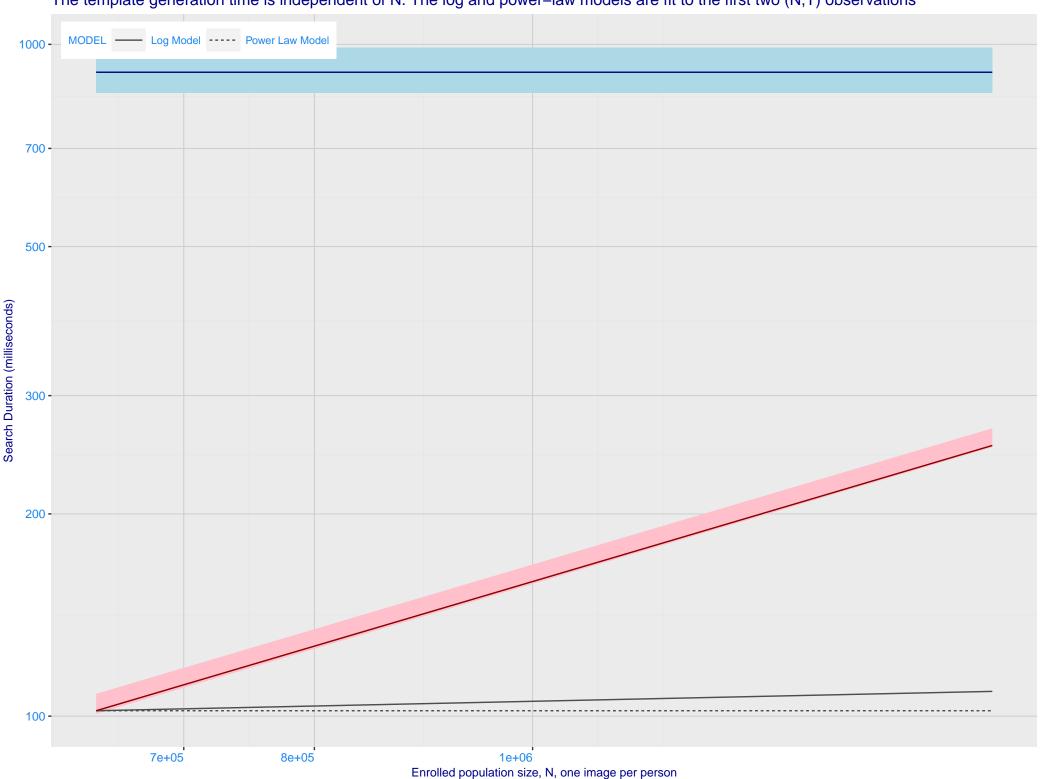




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Palse negative identification rate, FNIR(N) 0.002 - 0.001 - 0.500 - 0.200 - 0.100 - 0. enrolment_style consolidated ---- random --- recent Mugshot Mugshot webcam natural FNIR@Rank = 1 aware_2 sensetime_005 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



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



