A: Datasheet

Algorithm: microfocus_3

Developer: MicroFocus

Submission Date: 2018_06_22

Template size: 256 bytes

Template time (2.5 percentile): 226 msec

Template time (median): 265 msec

Template time (97.5 percentile): 338 msec

Investigation:

Frontal mugshot ranking 259 (out of 265) -- FNIR(1600000, 0, 1) = 0.5942 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 223 (out of 227) -- FNIR(1600000, 0, 1) = 0.7812 vs. lowest 0.0062 from sensetime_005

Immigration visa-border ranking 135 (out of 148) -- FNIR(1600000, 0, 1) = 0.7083 vs. lowest 0.0013 from visionlabs_010

Immigration visa-kiosk ranking 137 (out of 145) -- FNIR(1600000, 0, 1) = 0.9073 vs. lowest 0.0568 from hr_000

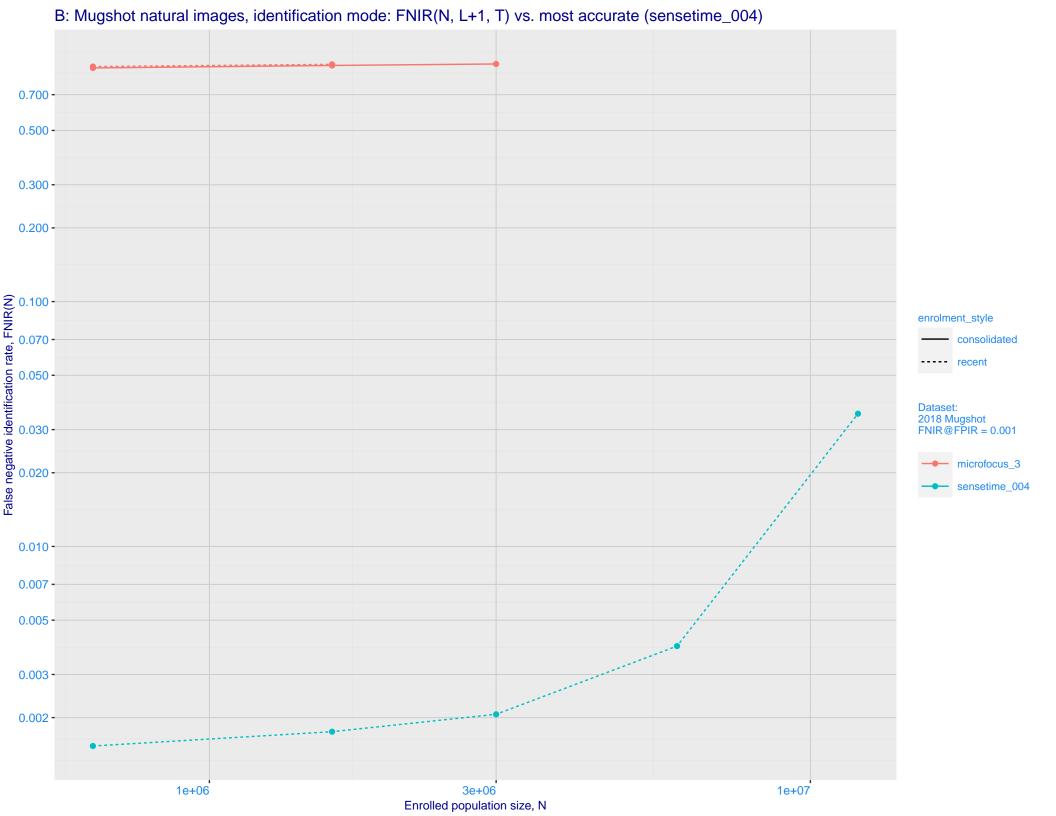
Identification:

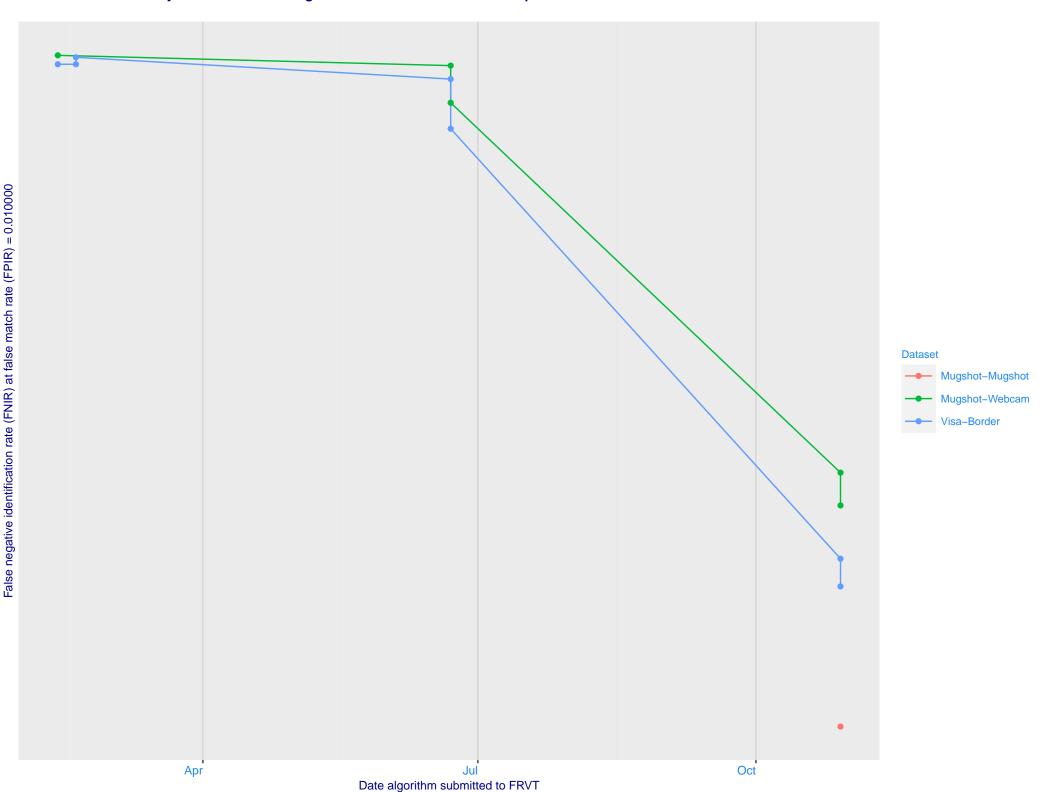
Frontal mugshot ranking 250 (out of 265) -- FNIR(1600000, T, L+1) = 0.9308, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 218 (out of 225) -- FNIR(1600000, T, L+1) = 0.9792, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Immigration visa-border ranking 131 (out of 146) -- FNIR(1600000, T, L+1) = 0.9825, FPIR=0.001000 vs. lowest 0.0049 from hr_000

Immigration visa-kiosk ranking 124 (out of 141) -- FNIR(1600000, T, L+1) = 0.9915, FPIR=0.001000 vs. lowest 0.0996 from hr_000

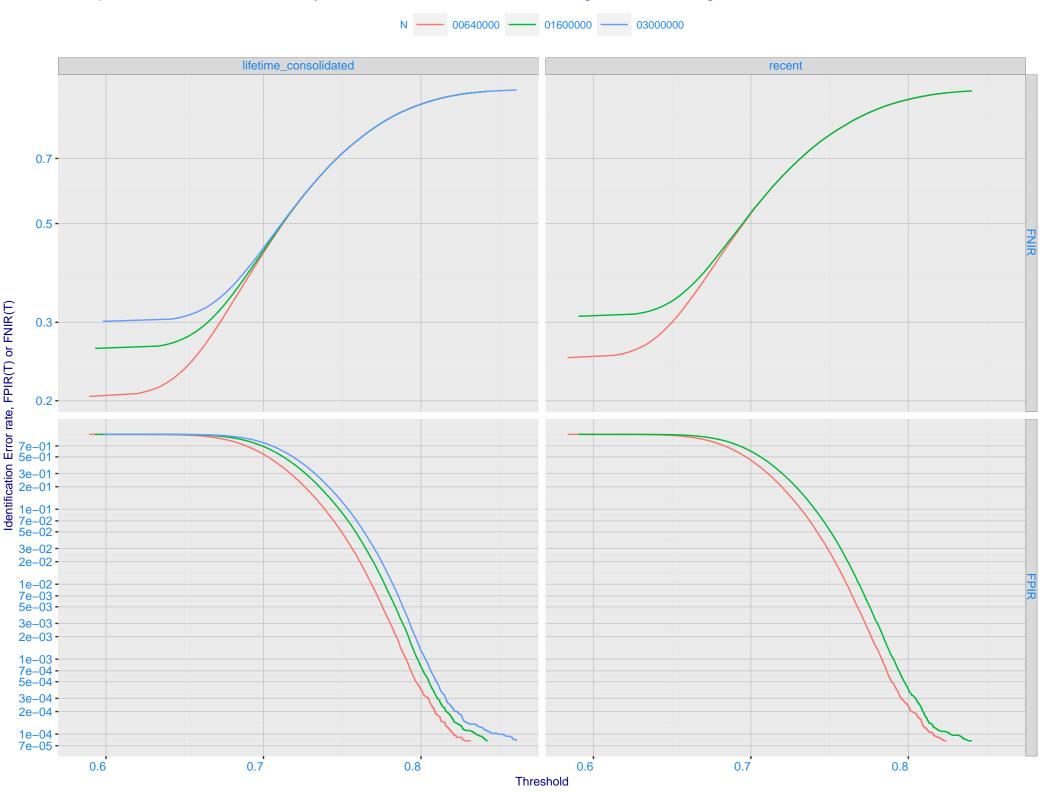




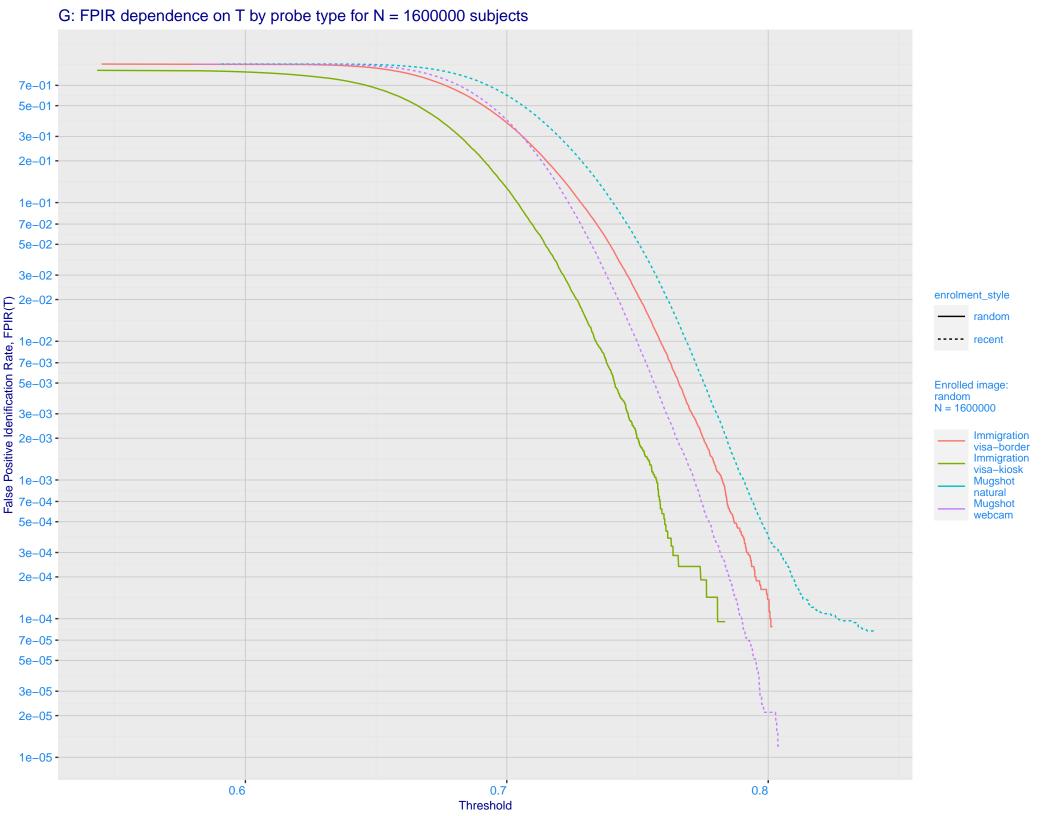
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration** Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 - 0.005 - 0.005 - 0.002 - 0.001 - 0.001 - 0.700 - 0.500 - 0.200 enrolment_style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

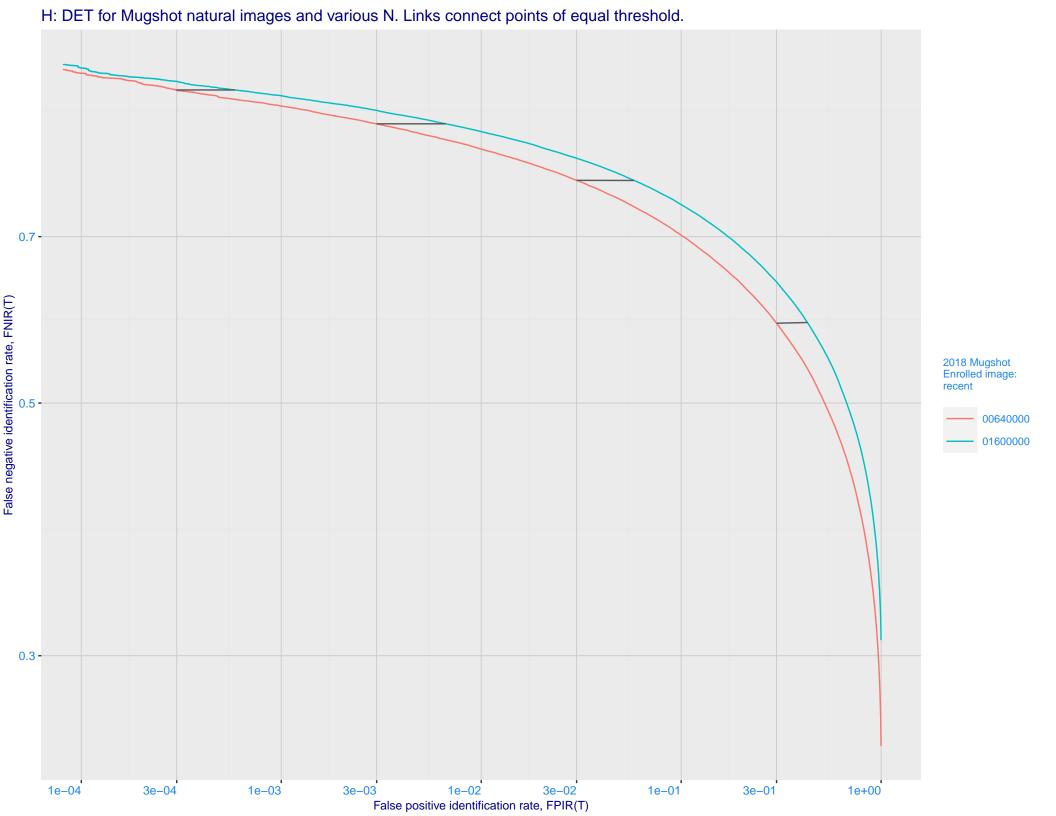
False positive identification rate, FPIR(T)

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 -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 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 - 0.003 - 0.002 - 0.001 - 0.001 - 0.700 - 0.500 - 0.300 - 0.200 enrolment_style consolidated ---- random --- recent Mugshot Mugshot webcam natural FNIR@Rank = 1 microfocus_3 sensetime_005 0.100 -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

J: Investigational mode: FNIR(1600000, R, 0) by probe type microfocus_3 sensetime_005 0.700 -0.500 -0.300 -0.200 -0.100 enrolment_style Ealse negative identification rate, FNIR(N) 0.000 - 0.000 - 0.000 - 0.010 - 0. lifetime_consolidated ---- random --- recent FNIR(R) N = 1600000 Immigration visa-border Immigration visa-kiosk Mugshot natural Mugshot webcam 0.007 -0.005 -0.003 -0.002 -0.001 -10 30 10 30 Rank, R

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 300 -200 -100 -70 -7e+05 8e+05 1e+06

Enrolled population size, N, one image per person

Search Duration (milliseconds)

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



