A: Datasheet

Algorithm: microfocus_5

Developer: MicroFocus

Submission Date: 2018_10_29

Template size: 256 bytes

Template time (2.5 percentile): 225 msec

Template time (median): 263 msec

Template time (97.5 percentile): 312 msec

Investigation:

Frontal mugshot ranking 267 (out of 279) -- FNIR(1600000, 0, 1) = 0.4242 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 231 (out of 241) -- FNIR(1600000, 0, 1) = 0.6010 vs. lowest 0.0062 from sensetime_005

Immigration visa-border ranking 149 (out of 168) -- FNIR(1600000, 0, 1) = 0.4943 vs. lowest 0.0013 from visionlabs_010

Immigration visa-kiosk ranking 151 (out of 165) -- FNIR(1600000, 0, 1) = 0.7774 vs. lowest 0.0568 from cloudwalk_hr_000

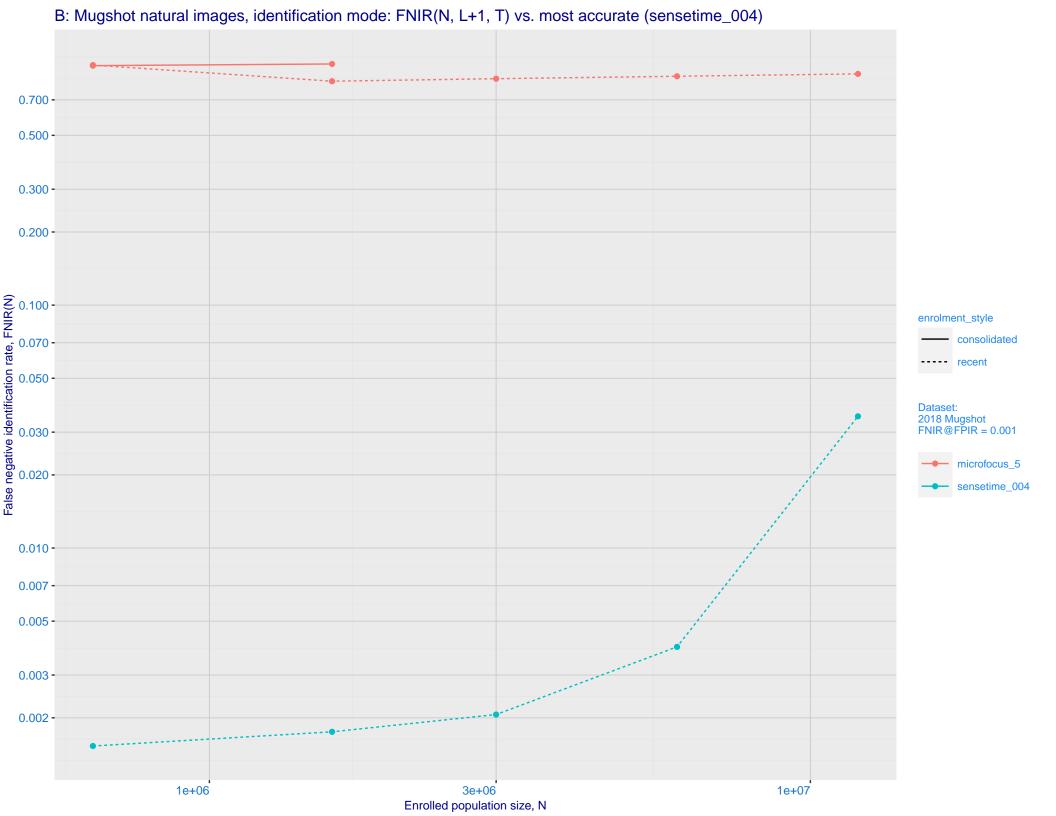
Identification:

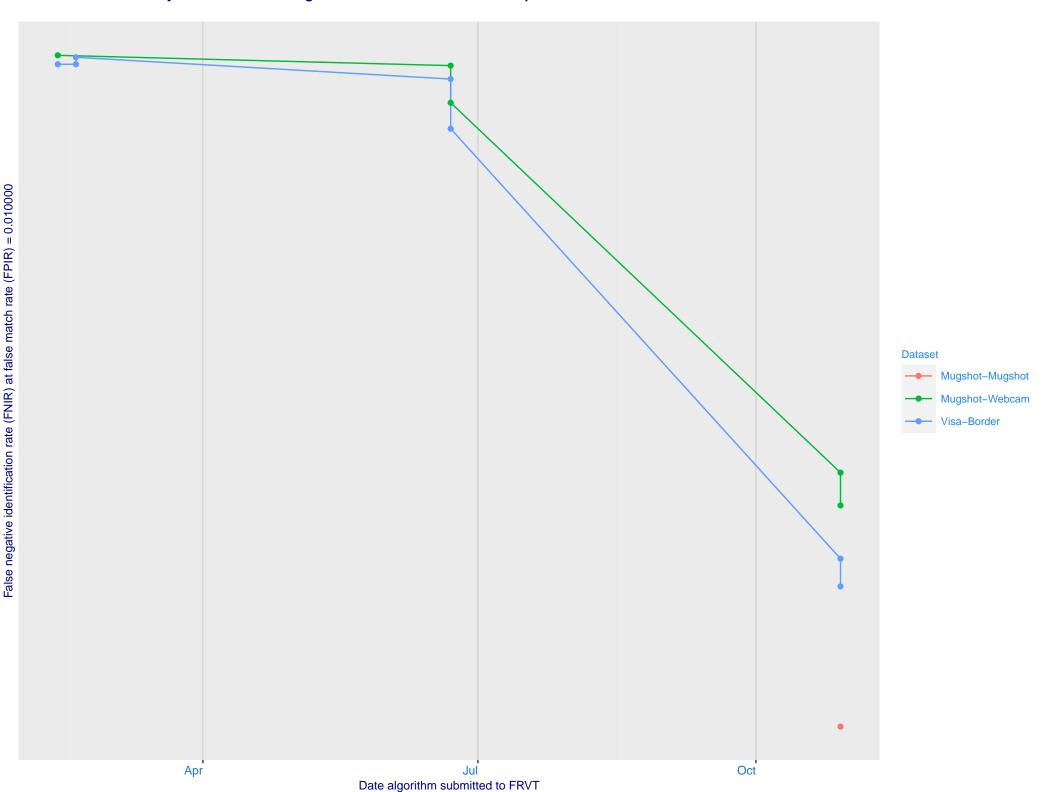
Frontal mugshot ranking 260 (out of 279) -- FNIR(1600000, T, L+1) = 0.8352, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 222 (out of 236) -- FNIR(1600000, T, L+1) = 0.9281, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Immigration visa-border ranking 146 (out of 167) -- FNIR(1600000, T, L+1) = 0.9348, FPIR=0.001000 vs. lowest 0.0047 from idemia_008

Immigration visa-kiosk ranking 134 (out of 162) -- FNIR(1600000, T, L+1) = 0.9848, FPIR=0.001000 vs. lowest 0.0996 from cloudwalk_hr_000

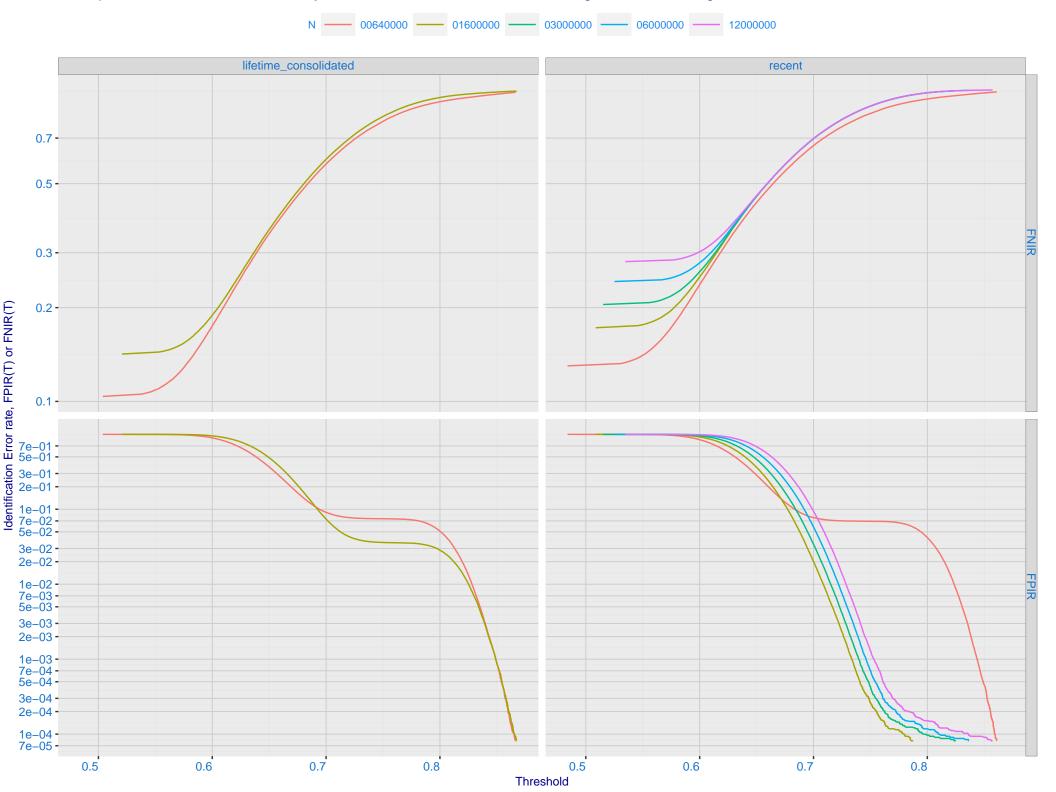




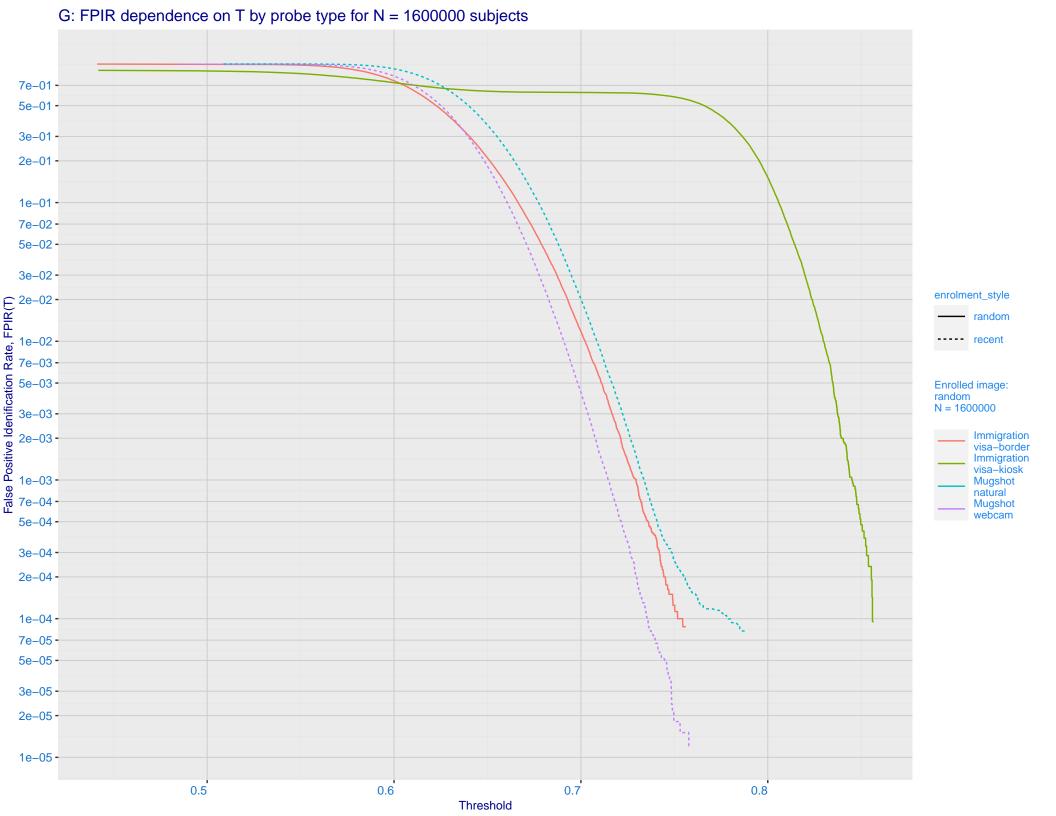
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration **Immigration** Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 microfocus 5 0.050 -0.030 -0.020 -0.010 -0.007 - 0.005 - 0.005 - 0.002 - 0.001 - 0.001 - 0.700 - 0.500 - 0.200 enrolment_style consolidated-ONE-MATE random-ONE-MATE recent-ONE-MATE unconsolidated-ALL-MATES unconsolidated-ANY-MATE 0.100 -0.070 sensetime 004 0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -

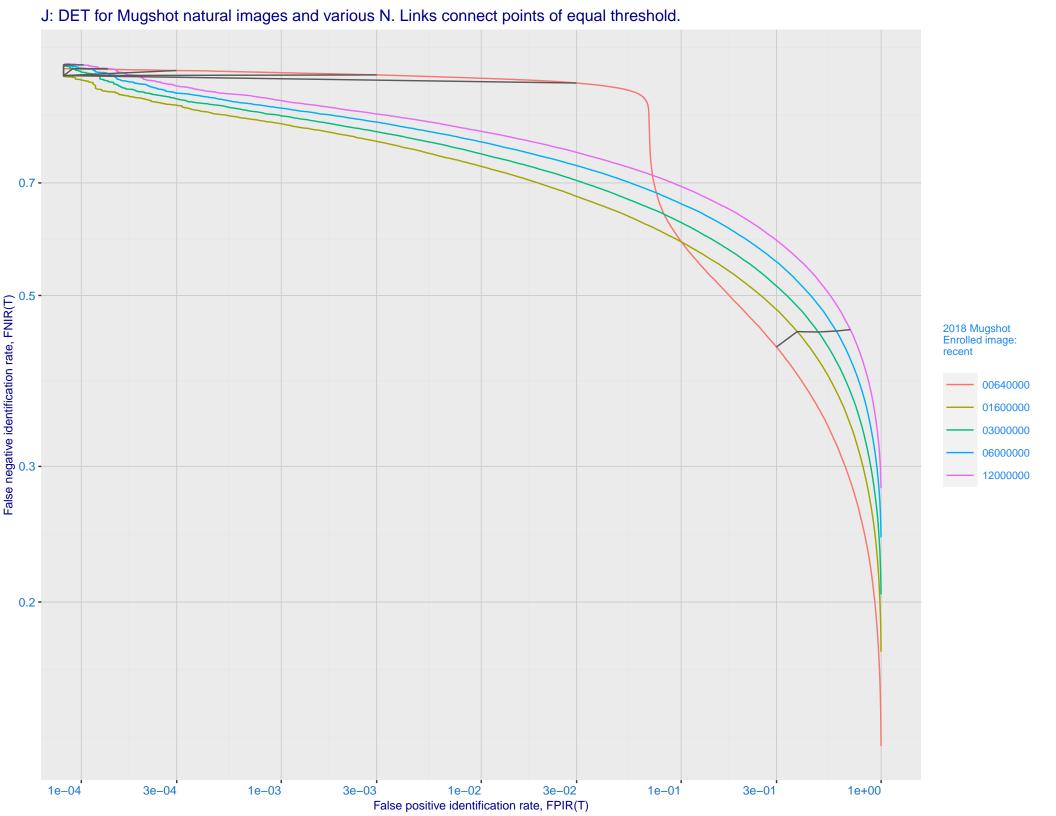
False positive identification rate, FPIR(T)

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 -Selectivity. SEL(T) 7e-02 - 5e-02 - 5e-02 - 12e-02 - 12e Enrolled images: recent N = 1600000 Mugshot natural Mugshot webcam 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 -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)

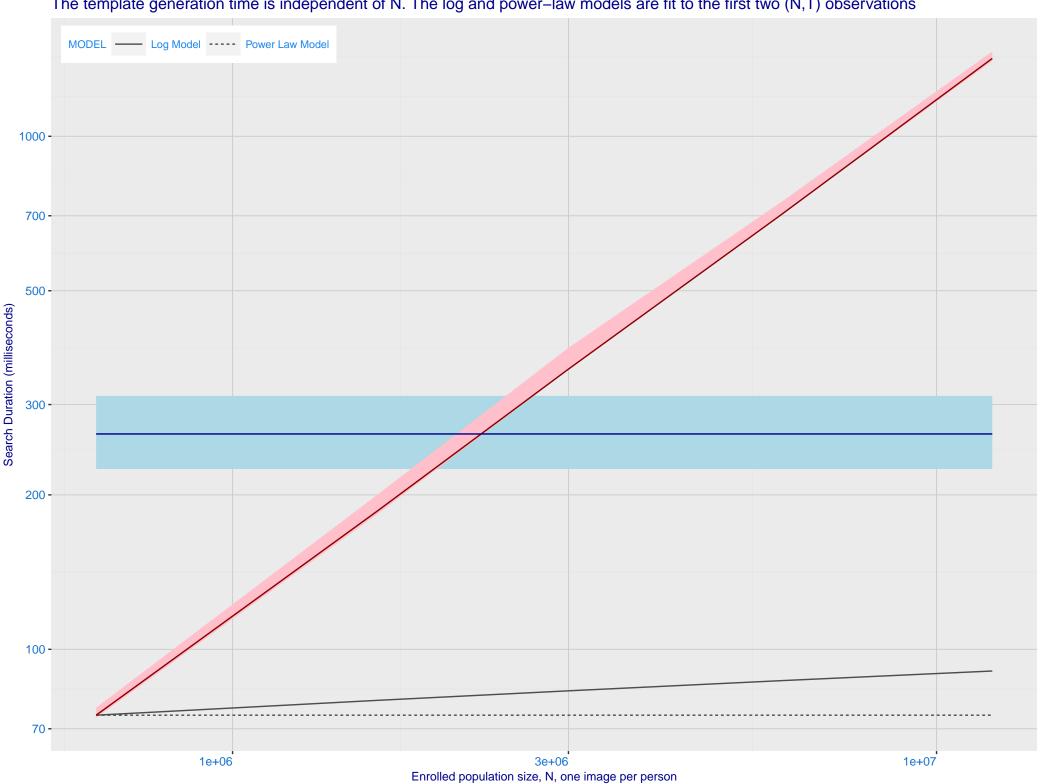




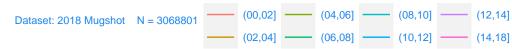
K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 - 0.003 - 0.002 - 0.001 - 0.001 - 0.700 - 0.500 - 0.300 - 0.200 enrolment_style consolidated ---- random --- recent Mugshot webcam Mugshot natural FNIR@Rank = 1 microfocus_5 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

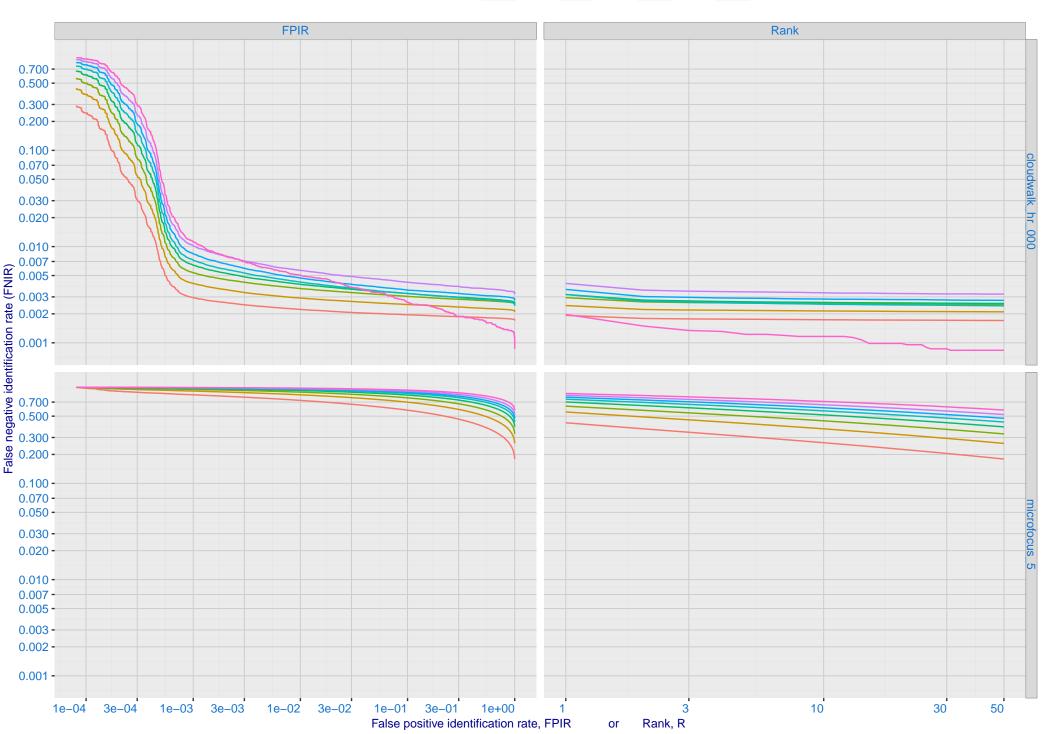
L: Investigational mode: FNIR(1600000, R, 0) by probe type microfocus_5 sensetime_005 0.700 -0.500 -0.300 -0.200 -0.100 enrolment_style Ealse negative identification rate, FNIR(N) 0.000 - 0.000 - 0.000 - 0.010 - 0. lifetime_consolidated ---- random --- recent FNIR(R) N = 1600000 Immigration visa-border Immigration visa-kiosk Mugshot natural Mugshot webcam 0.007 -0.005 -0.003 -0.002 -0.001 -10 30 3 10 30 Rank, R

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



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





R: Decline of genuine scores with ageing, with some eventually dropping below typical thresholds shown by the horizontal lines 1.0 -0.9 -Dataset: 2018 Mugshot N= 3.1M Color encodes FNIR (Rank = 1) 0.15 0.8 -0.10 0.05 0.00 0.7 -TVAL - FPIR = 0.001 - FPIR = 0.003 FPIR = 0.0100.6 -FPIR = 0.030 0.5 -(00,02](02,04](04,06](06,08](08,10](10,12](12,14](14,18]Time lapse between search and initial encounter enrollment (years)