A: Datasheet

Algorithm: eyedea_1

Developer: Eyedea Recognition

Submission Date: 2018_02_16

Template size: 1036 bytes

Template time (2.5 percentile): 280 msec

Template time (median): 310 msec

Template time (97.5 percentile): 351 msec

Investigation:

Frontal mugshot ranking 250 (out of 279) -- FNIR(1600000, 0, 1) = 0.1960 vs. lowest 0.0009 from sensetime_005

Mugshot profile ranking 145 (out of 210) -- FNIR(1600000, 0, 1) = 0.9366 vs. lowest 0.0587 from xforwardai_002

Immigration visa-border ranking 135 (out of 168) -- FNIR(1600000, 0, 1) = 0.2123 vs. lowest 0.0013 from visionlabs_010

Immigration visa-kiosk ranking 138 (out of 165) -- FNIR(1600000, 0, 1) = 0.4925 vs. lowest 0.0568 from cloudwalk_hr_000

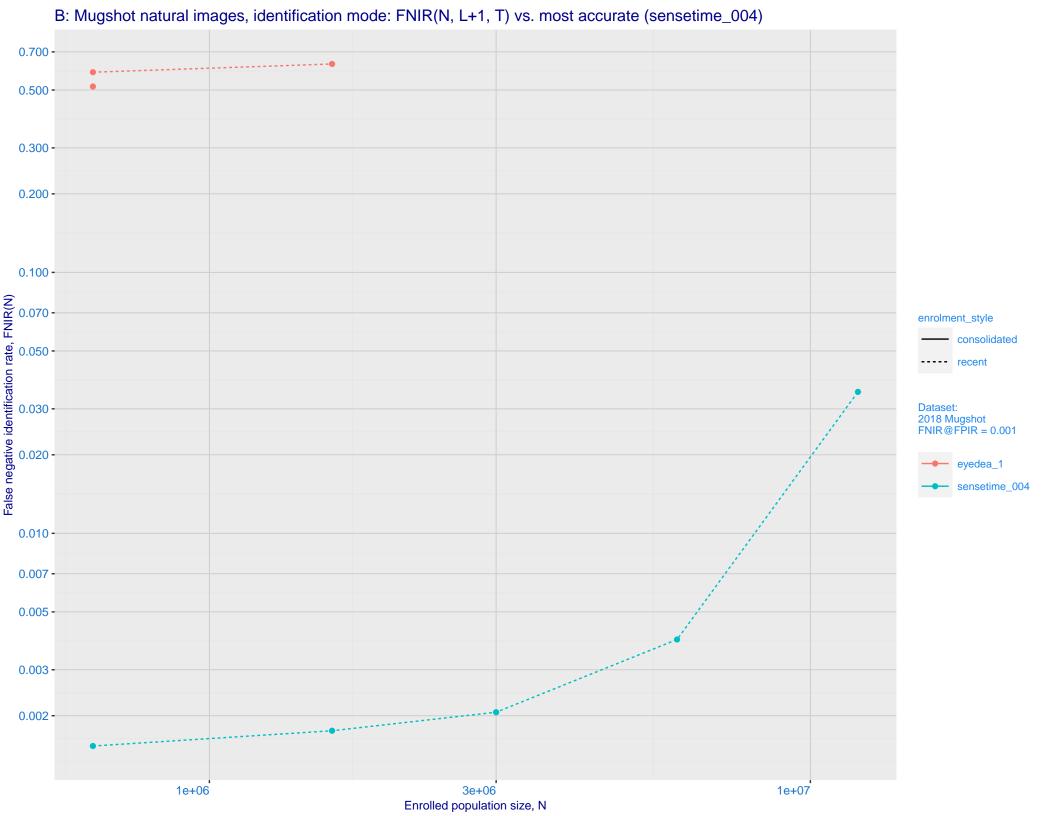
Identification:

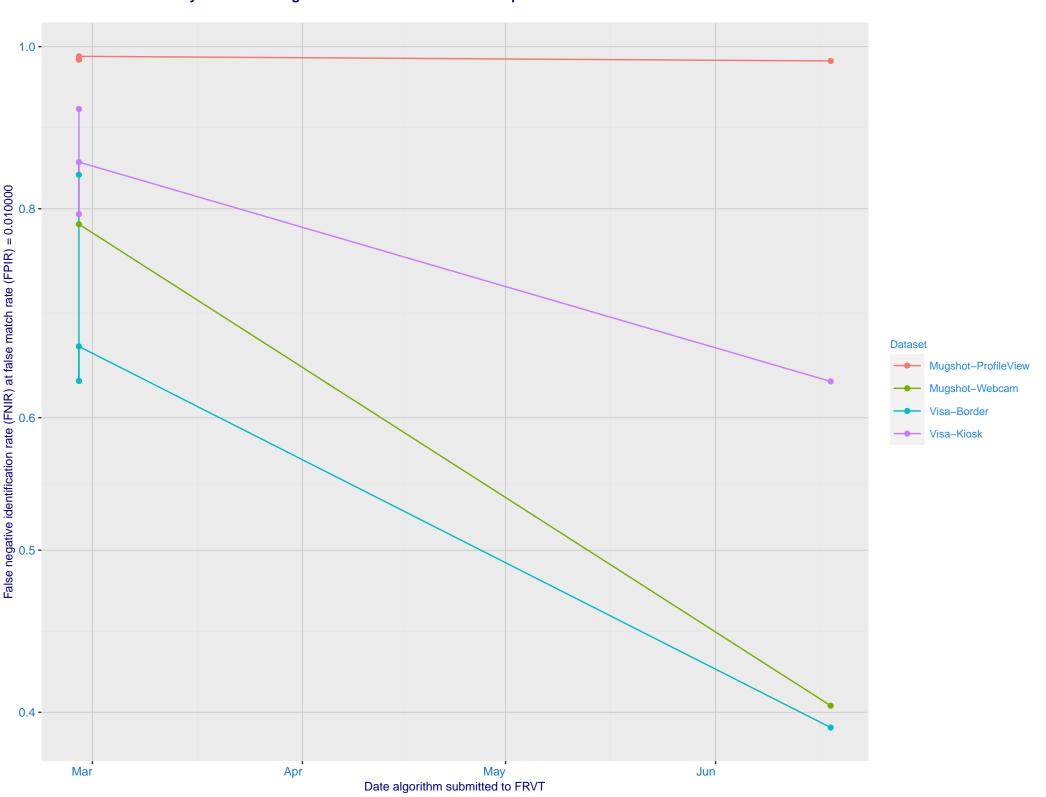
Frontal mugshot ranking 244 (out of 279) -- FNIR(1600000, T, L+1) = 0.6291, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot profile ranking 140 (out of 209) -- FNIR(1600000, T, L+1) = 0.9990, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000

Immigration visa-border ranking 137 (out of 167) -- FNIR(1600000, T, L+1) = 0.7827, FPIR=0.001000 vs. lowest 0.0047 from idemia_008

Immigration visa-kiosk ranking 114 (out of 162) -- FNIR(1600000, T, L+1) = 0.8991, 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 -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

2e-04 -

1e-04 -7e-05 -

0.5

0.6

0.7

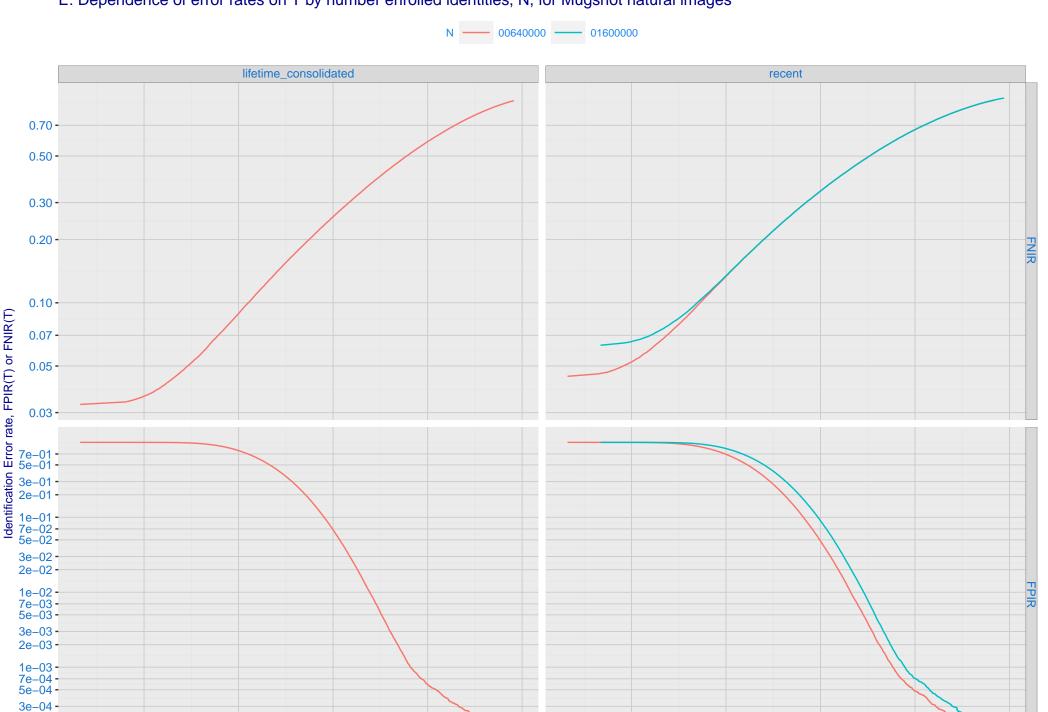
0.8

0.9

Threshold

0.5

0.6

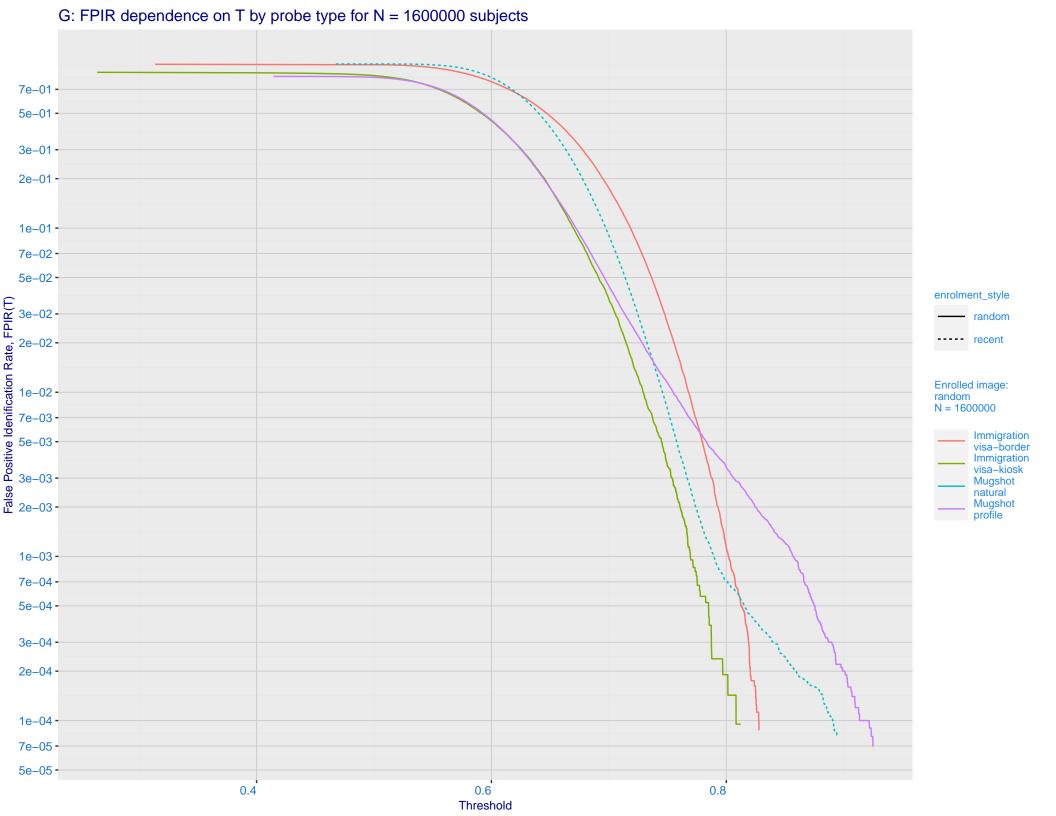


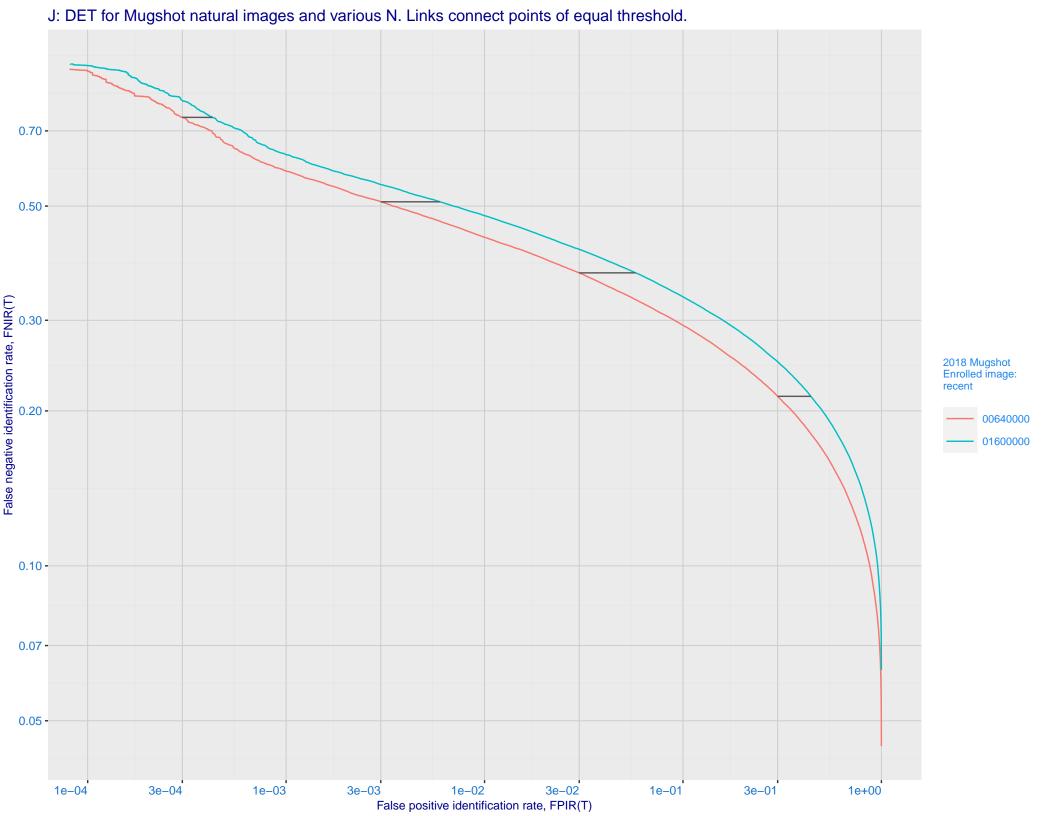
0.7

0.8

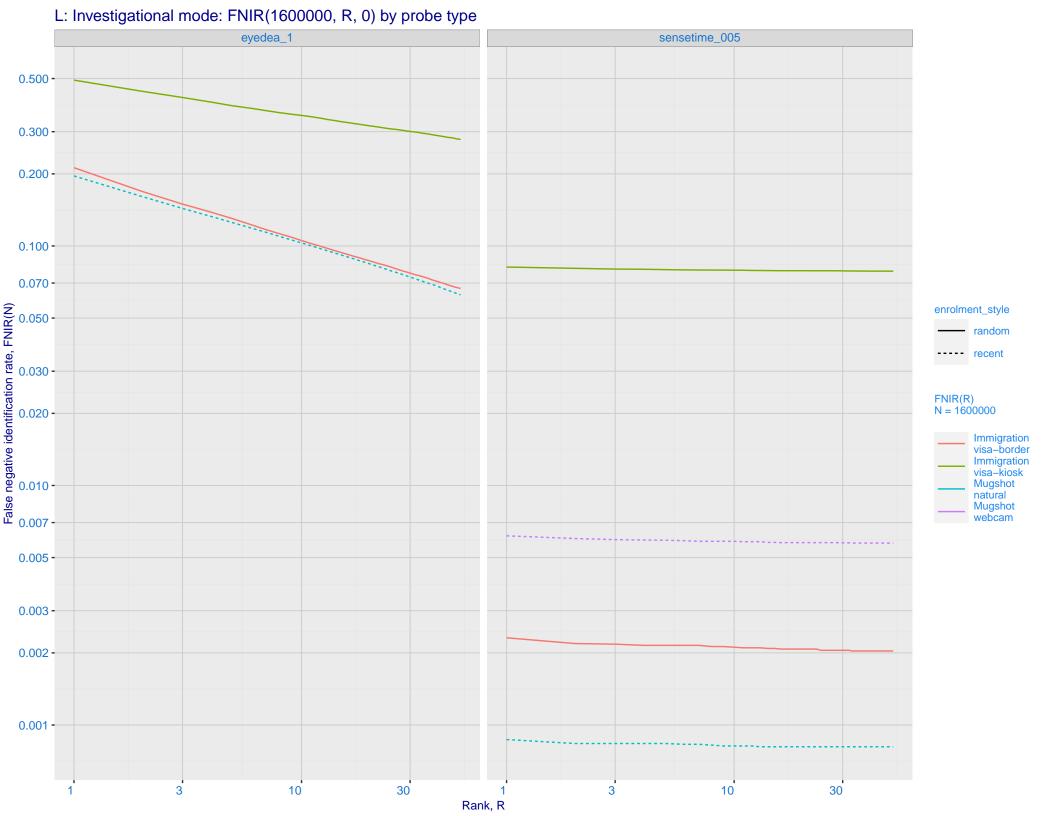
0.9

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 -Selectivity, SEL(T) 2e-01 -2e-01 -1e-01 -7e-02 -5e-02 -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 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 False Positive Idenification Rate, FPIR(T)

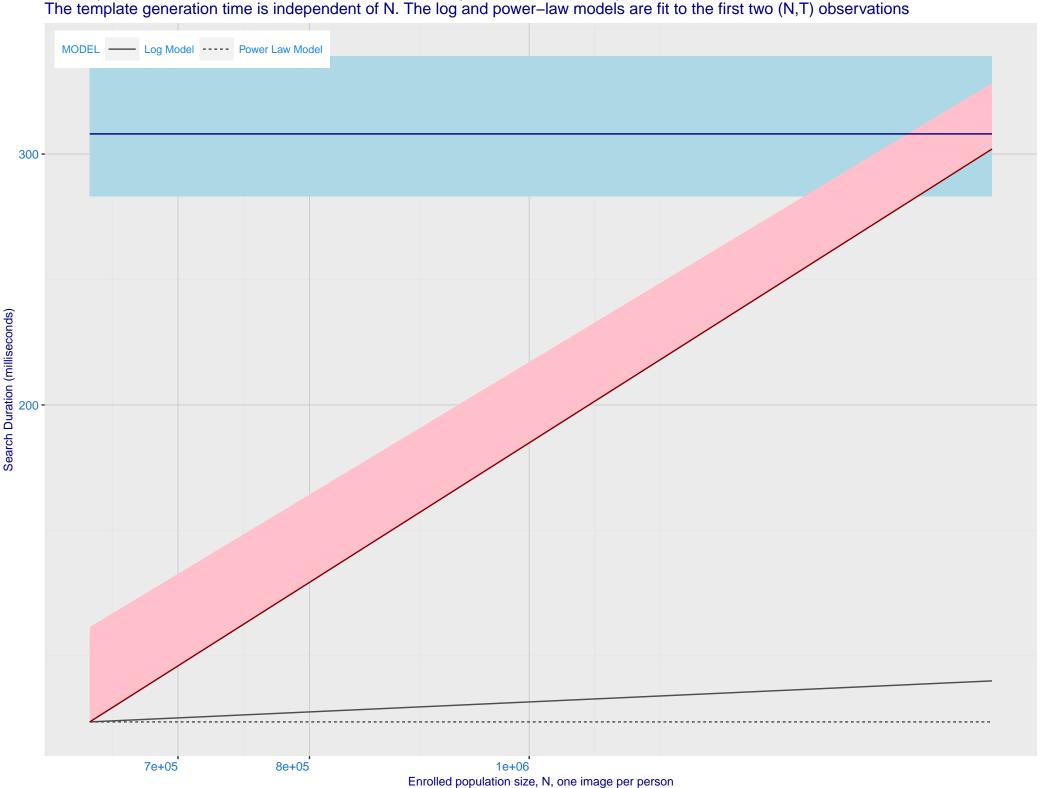




K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Ealse negative identification rate, FNIR(N) 0.003 - 0.001 - 0.500 - 0.200 - 0.100 - 0. enrolment_style consolidated ---- random --- recent Mugshot Mugshot webcam natural FNIR@Rank = 1 eyedea_1 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



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



