A: Datasheet

Algorithm: eyedea_2

Developer: Eyedea Recognition

Submission Date: 2018_02_16

Template size: 1036 bytes

Template time (2.5 percentile): 353 msec

Template time (median): 426 msec

Template time (97.5 percentile): 520 msec

Investigation:

Frontal mugshot ranking 251 (out of 279) -- FNIR(1600000, 0, 1) = 0.1979 vs. lowest 0.0009 from sensetime_005

Mugshot profile ranking 141 (out of 210) -- FNIR(1600000, 0, 1) = 0.9343 vs. lowest 0.0587 from xforwardai_002

Immigration visa-border ranking 137 (out of 168) -- FNIR(1600000, 0, 1) = 0.2298 vs. lowest 0.0013 from visionlabs_010

Immigration visa-kiosk ranking 139 (out of 165) -- FNIR(1600000, 0, 1) = 0.4965 vs. lowest 0.0568 from cloudwalk_hr_000

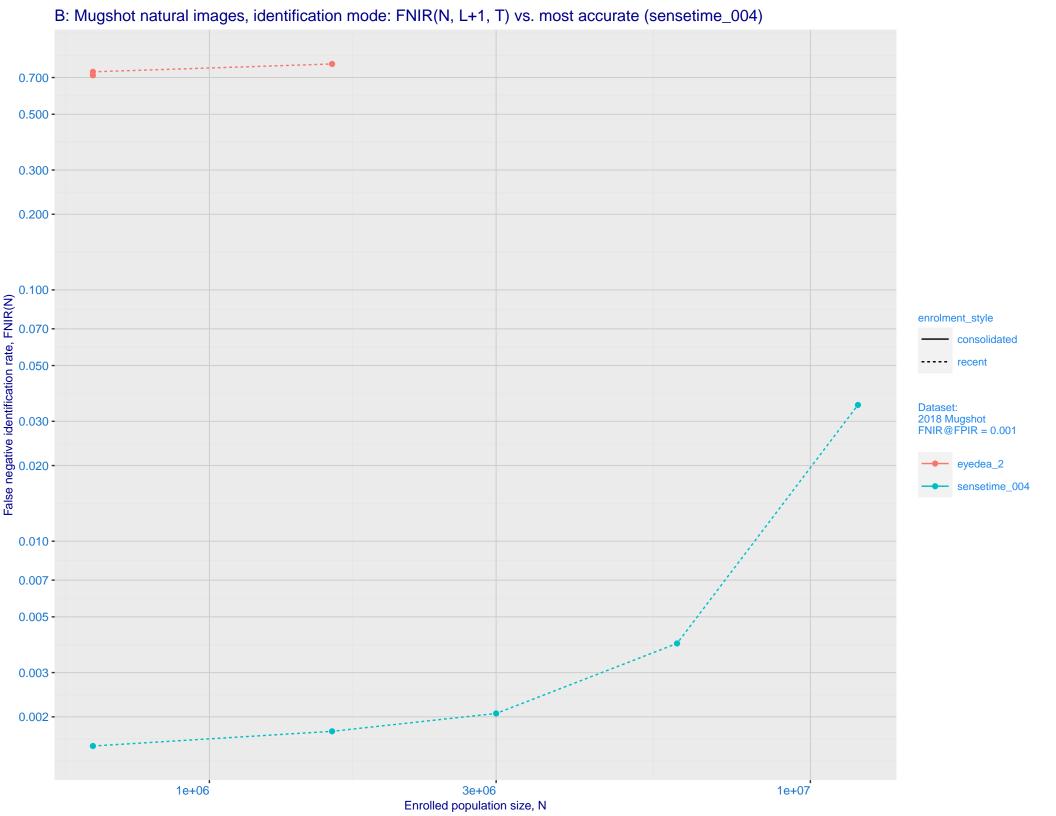
Identification:

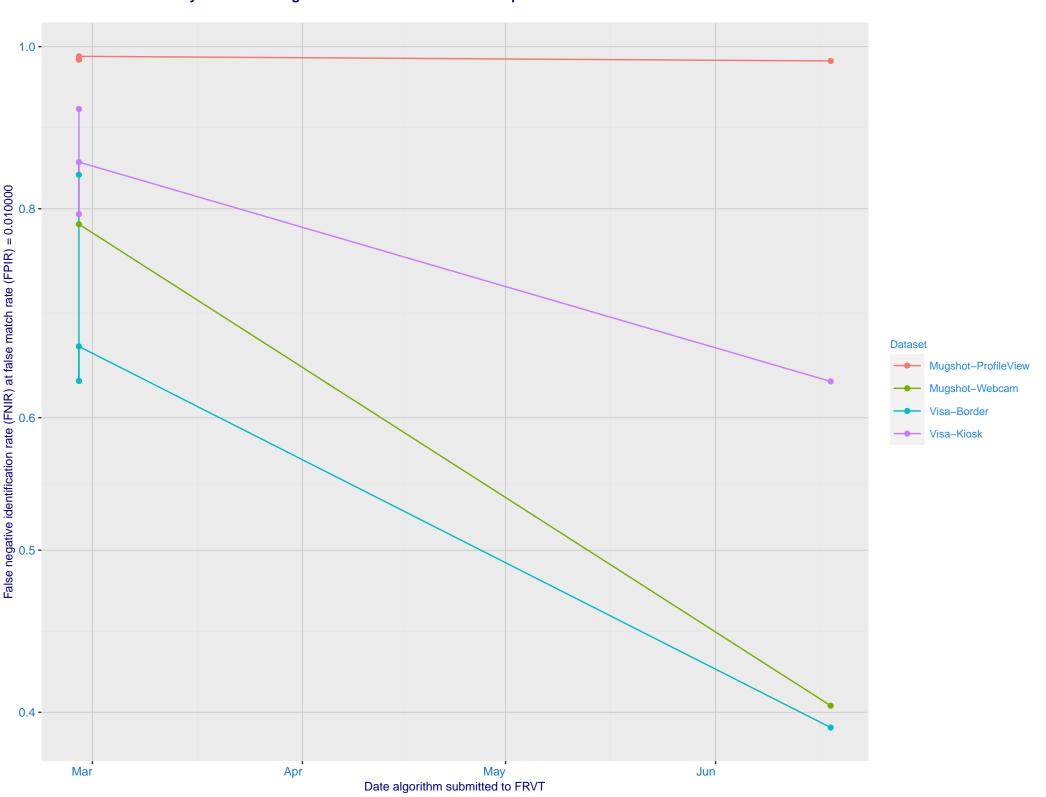
Frontal mugshot ranking 254 (out of 279) -- FNIR(1600000, T, L+1) = 0.7926, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot profile ranking 152 (out of 209) -- FNIR(1600000, T, L+1) = 0.9994, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000

Immigration visa-border ranking 139 (out of 167) -- FNIR(1600000, T, L+1) = 0.8351, FPIR=0.001000 vs. lowest 0.0047 from idemia_008

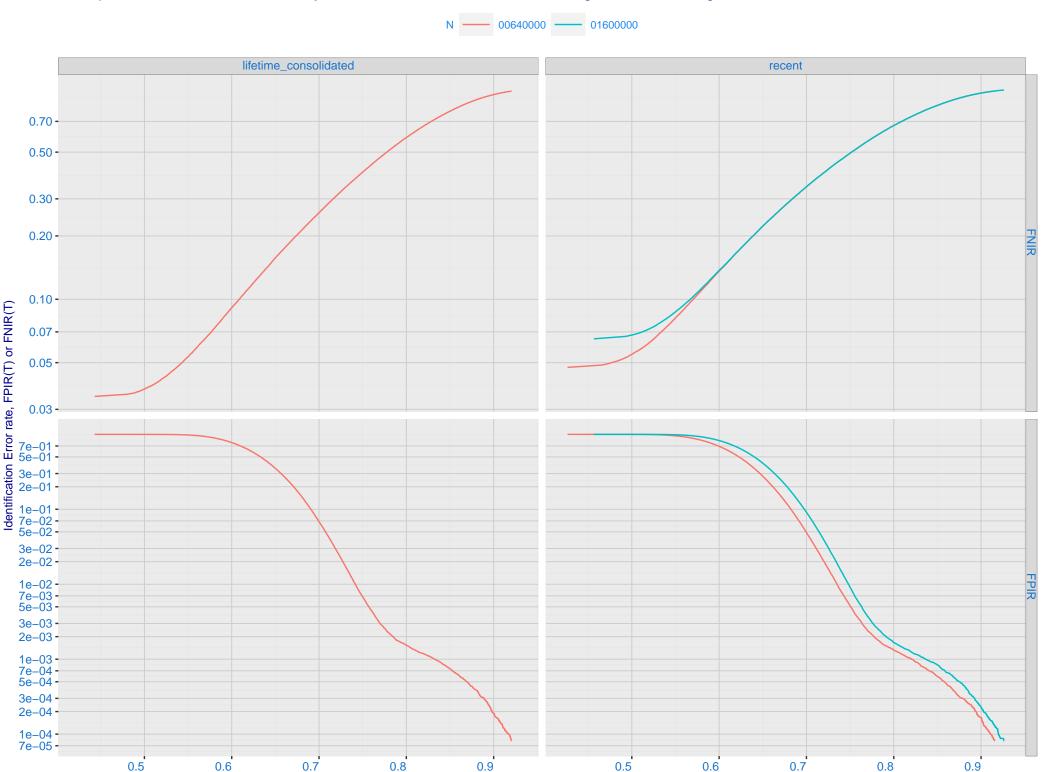
Immigration visa-kiosk ranking 124 (out of 162) -- FNIR(1600000, T, L+1) = 0.9471, FPIR=0.001000 vs. lowest 0.0996 from cloudwalk_hr_000





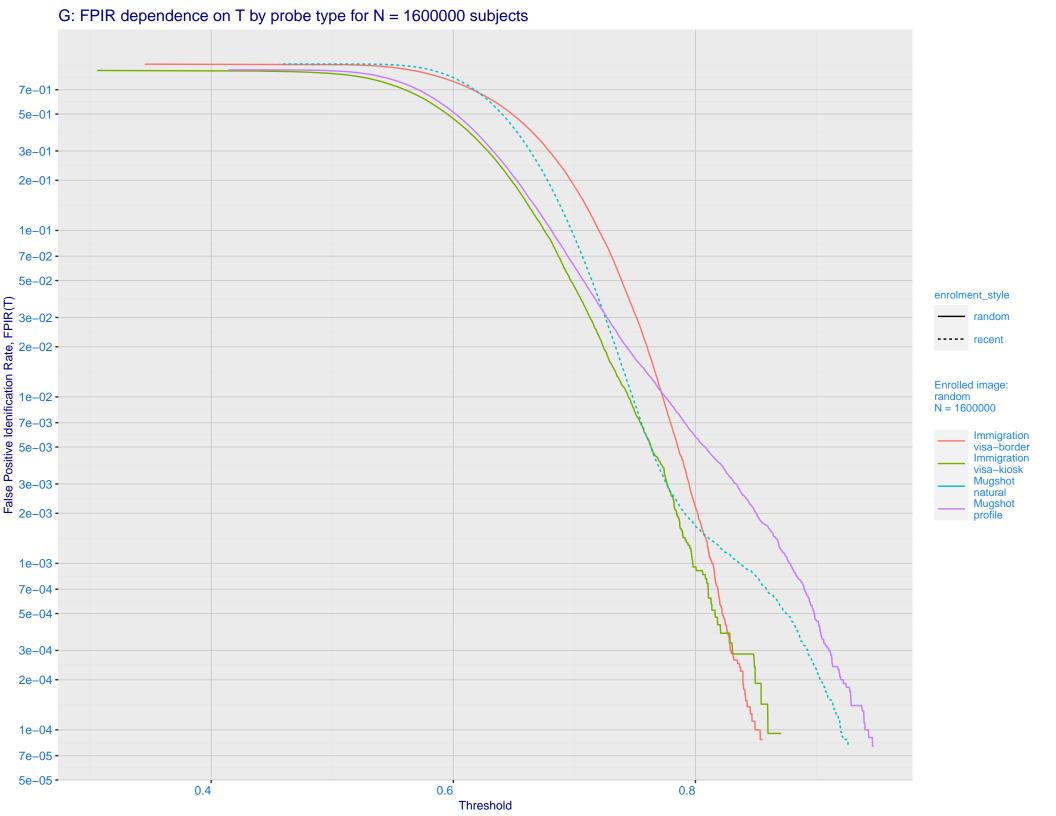
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 - 0.005 - 0.005 - 0.002 - 0.001 - 0.001 - 0.700 - 0.500 - 0.200 enrolment_style random-ONE-MATE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

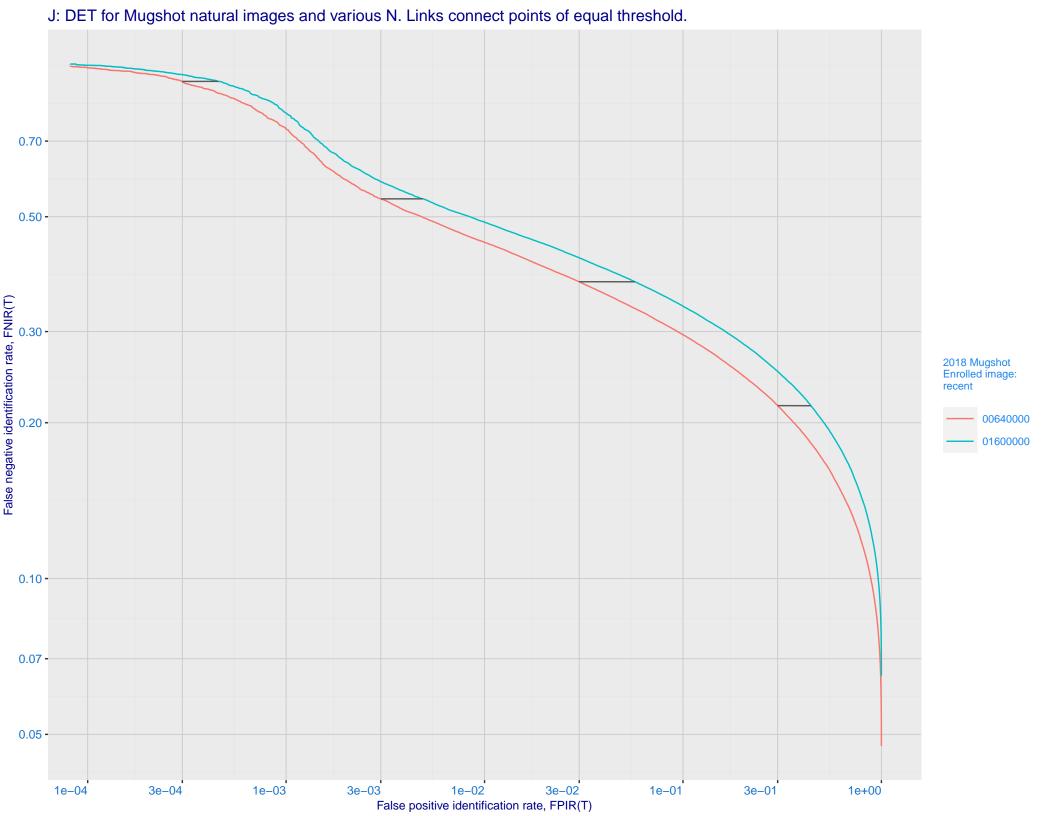
E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



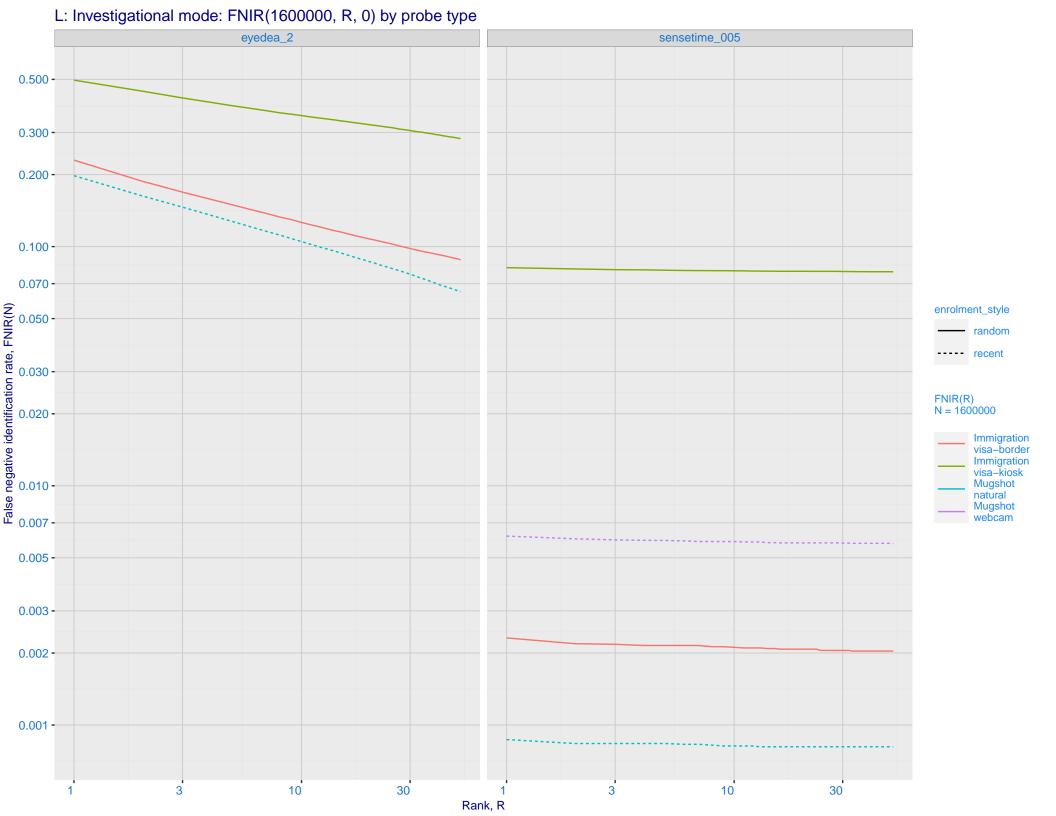
Threshold

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 -2e-01 -3electivity, SET -1e-01 -7e-02 -5e-02 -Enrolled images: recent N = 1600000 Mugshot natural 5e-02 -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) 0.000 - 0.0001 - 0.500 - 0.200 - 0 enrolment_style consolidated ---- random --- recent Mugshot Mugshot webcam natural FNIR@Rank = 1 eyedea_2 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



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 Log Model ---- Power Law Model 500 -Search Duration (milliseconds) 200 -7e+05 8e+05 1e+06

Enrolled population size, N, one image per person

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



