A: Datasheet

Algorithm: gorilla_1

Developer: Gorilla Technology

Submission Date: 2018_06_19

Template size: 2156 bytes

Template time (2.5 percentile): 141 msec

Template time (median): 167 msec

Template time (97.5 percentile): 207 msec

Investigation:

Frontal mugshot ranking 220 (out of 279) -- FNIR(1600000, 0, 1) = 0.0603 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 189 (out of 241) -- FNIR(1600000, 0, 1) = 0.0950 vs. lowest 0.0062 from sensetime_005

Mugshot profile ranking 144 (out of 210) — FNIR(1600000, 0, 1) = 0.9364 vs. lowest 0.0587 from xforwardai_002

Immigration visa-border ranking 115 (out of 168) -- FNIR(1600000, 0, 1) = 0.0685 vs. lowest 0.0013 from visionlabs_010

Immigration visa-kiosk ranking 122 (out of 165) -- FNIR(1600000, 0, 1) = 0.3293 vs. lowest 0.0568 from cloudwalk_hr_000

Identification:

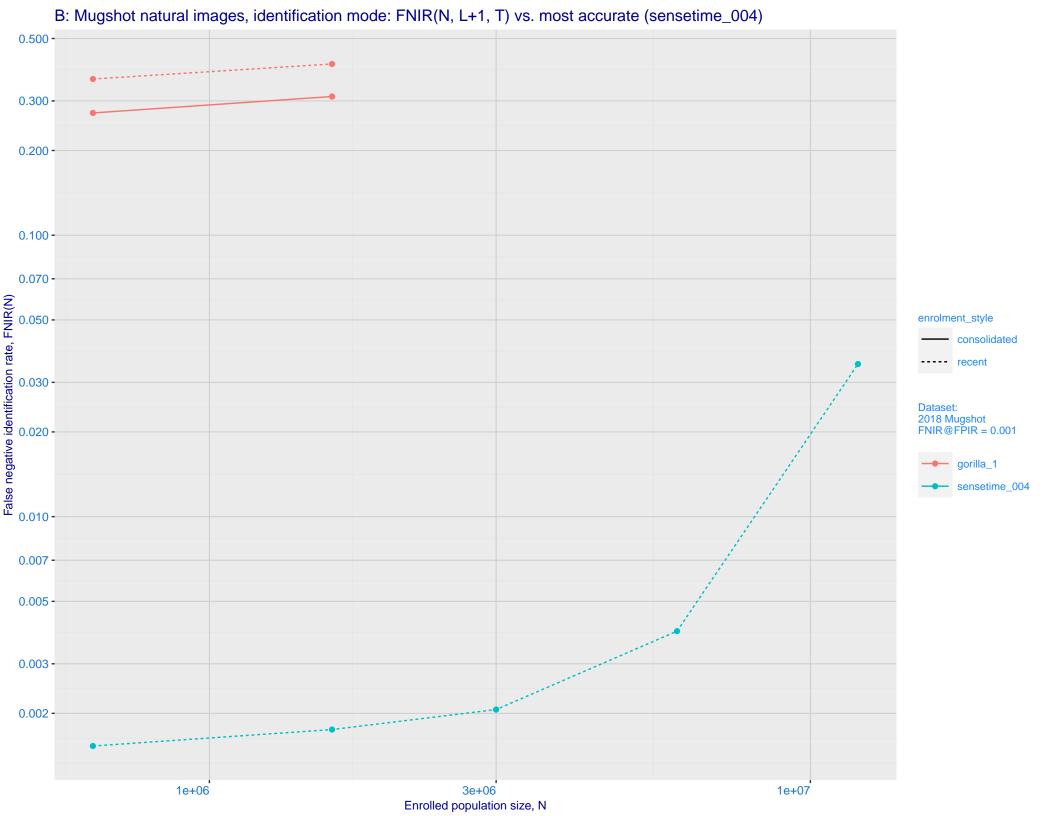
Frontal mugshot ranking 223 (out of 279) -- FNIR(1600000, T, L+1) = 0.4059, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

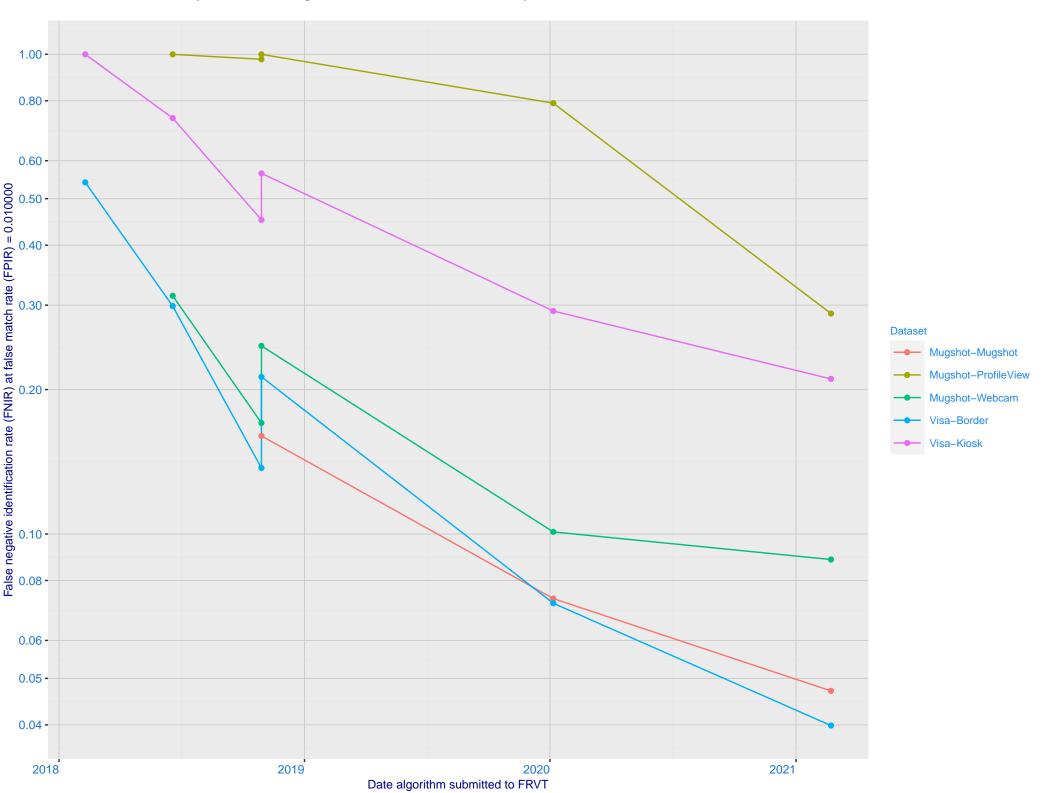
Mugshot webcam ranking 188 (out of 236) -- FNIR(1600000, T, L+1) = 0.4527, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 187 (out of 209) -- FNIR(1600000, T, L+1) = 0.9999, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk_hr_000

Immigration visa-border ranking 121 (out of 167) -- FNIR(1600000, T, L+1) = 0.4685, FPIR=0.001000 vs. lowest 0.0047 from idemia_008

Immigration visa-kiosk ranking 154 (out of 162) -- FNIR(1600000, T, L+1) = 1.0000, 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 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)

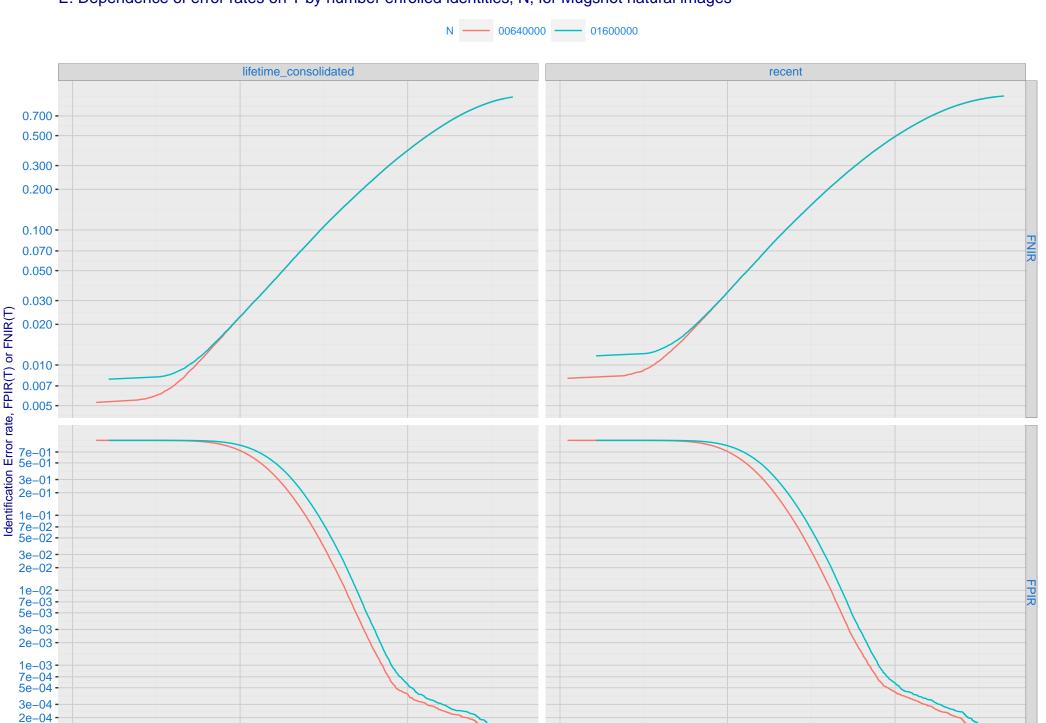
E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images

0.8

1e-04 -7e-05 -

0.4

0.6



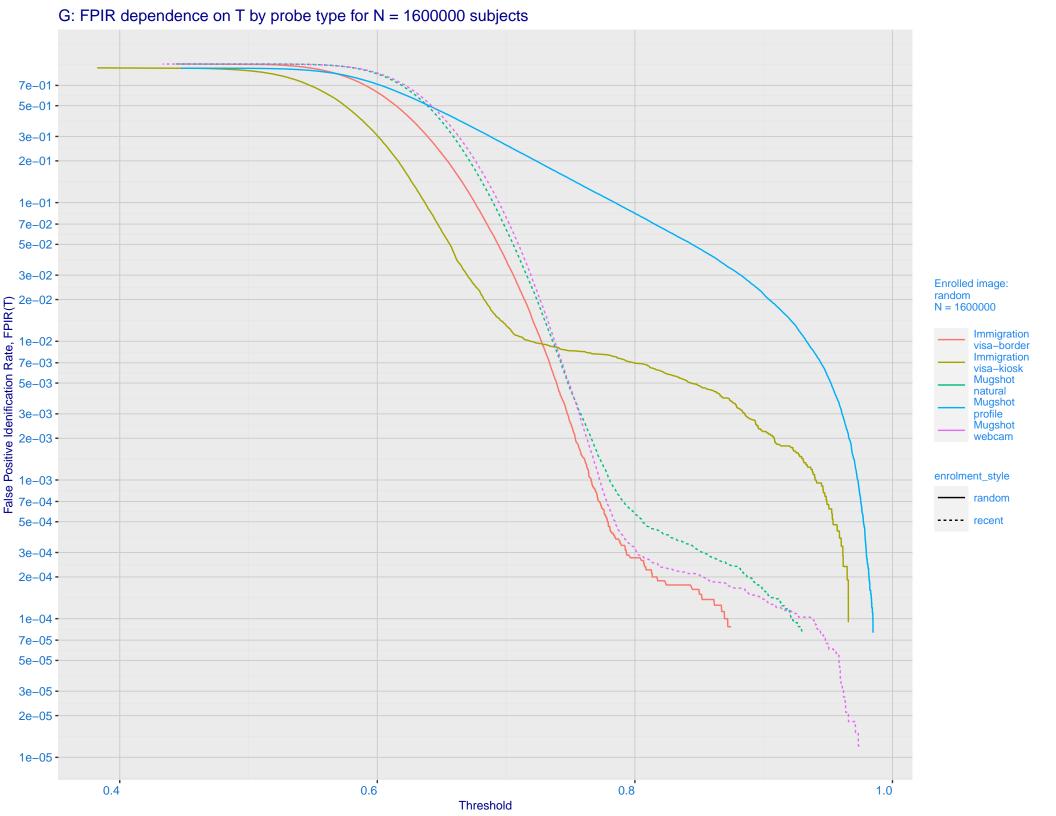
0.4

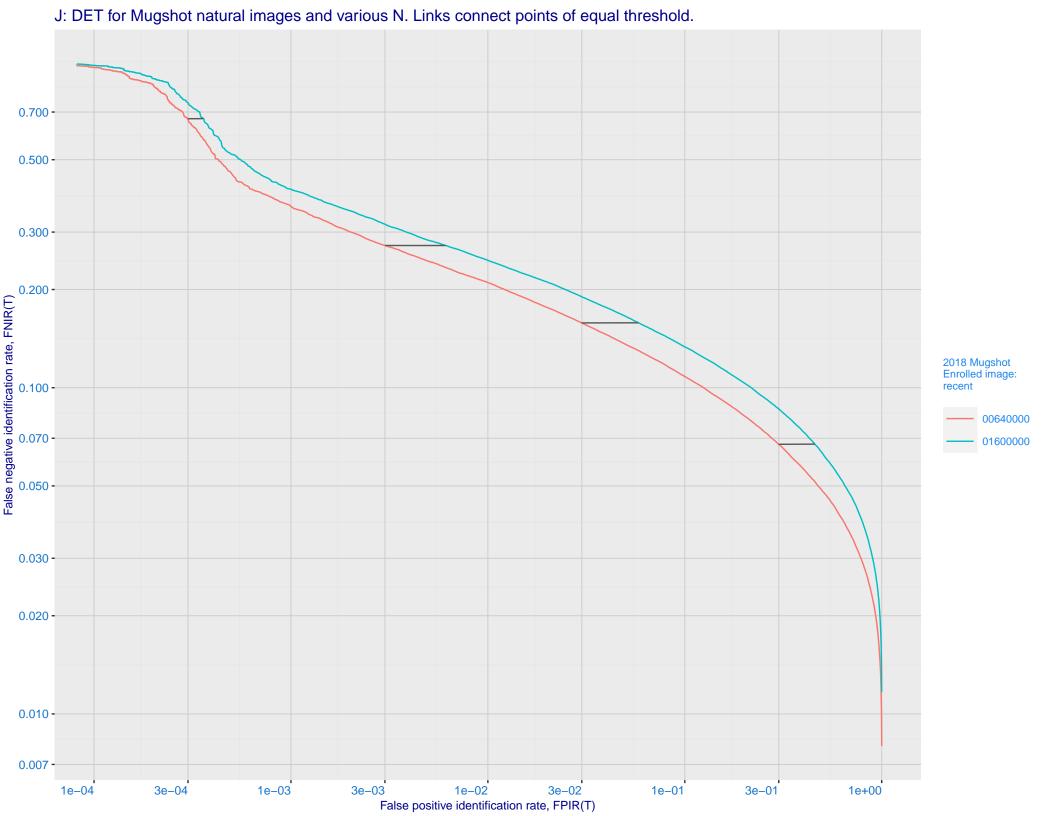
Threshold

0.6

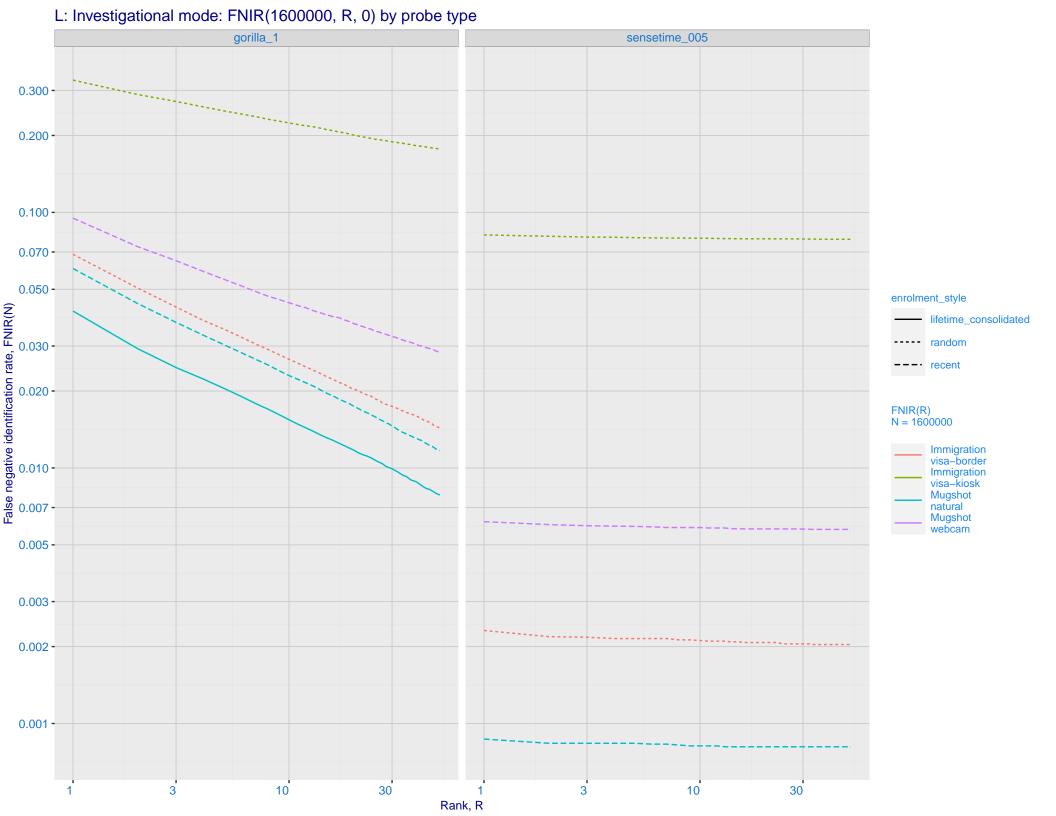
0.8

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)

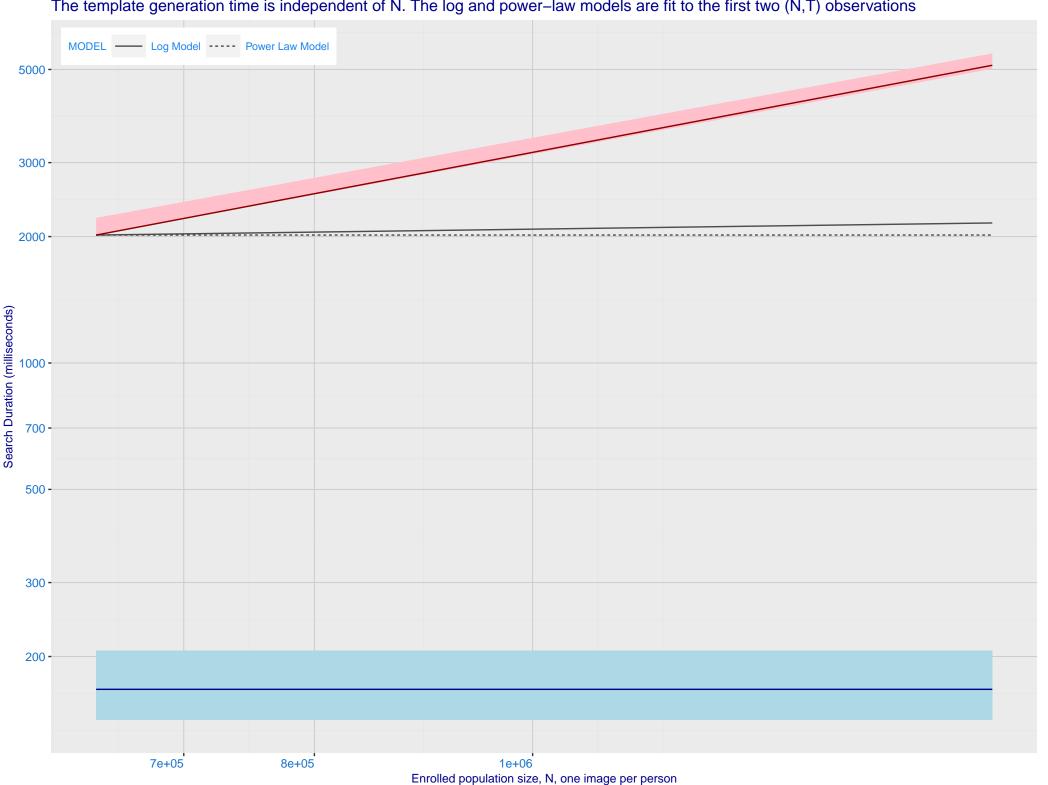




K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Ealse negative identification rate, FNIR(N) 0.003 - 0.001 - 0.300 - 0.200 - 0.100 - 0. FNIR@Rank = 1 gorilla_1 sensetime_005 Mugshot Mugshot webcam natural enrolment_style consolidated ---- random --- recent 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



