## A: Datasheet

Algorithm: glory\_1

Developer: Glory Ltd

Submission Date: 2018\_06\_30

Template size: 1726 bytes

Template time (2.5 percentile): 391 msec

Template time (median): 398 msec

Template time (97.5 percentile): 438 msec

Investigation:

Frontal mugshot ranking 236 (out of 279) -- FNIR(1600000, 0, 1) = 0.1268 vs. lowest 0.0009 from sensetime\_005

Mugshot webcam ranking 212 (out of 241) -- FNIR(1600000, 0, 1) = 0.2670 vs. lowest 0.0062 from sensetime\_005

Mugshot profile ranking 201 (out of 210) — FNIR(1600000, 0, 1) = 0.9918 vs. lowest 0.0587 from xforwardai\_002

Immigration visa-border ranking 133 (out of 168) -- FNIR(1600000, 0, 1) = 0.1779 vs. lowest 0.0013 from visionlabs\_010

Immigration visa-kiosk ranking 144 (out of 165) -- FNIR(1600000, 0, 1) = 0.5936 vs. lowest 0.0568 from cloudwalk\_hr\_000

Identification:

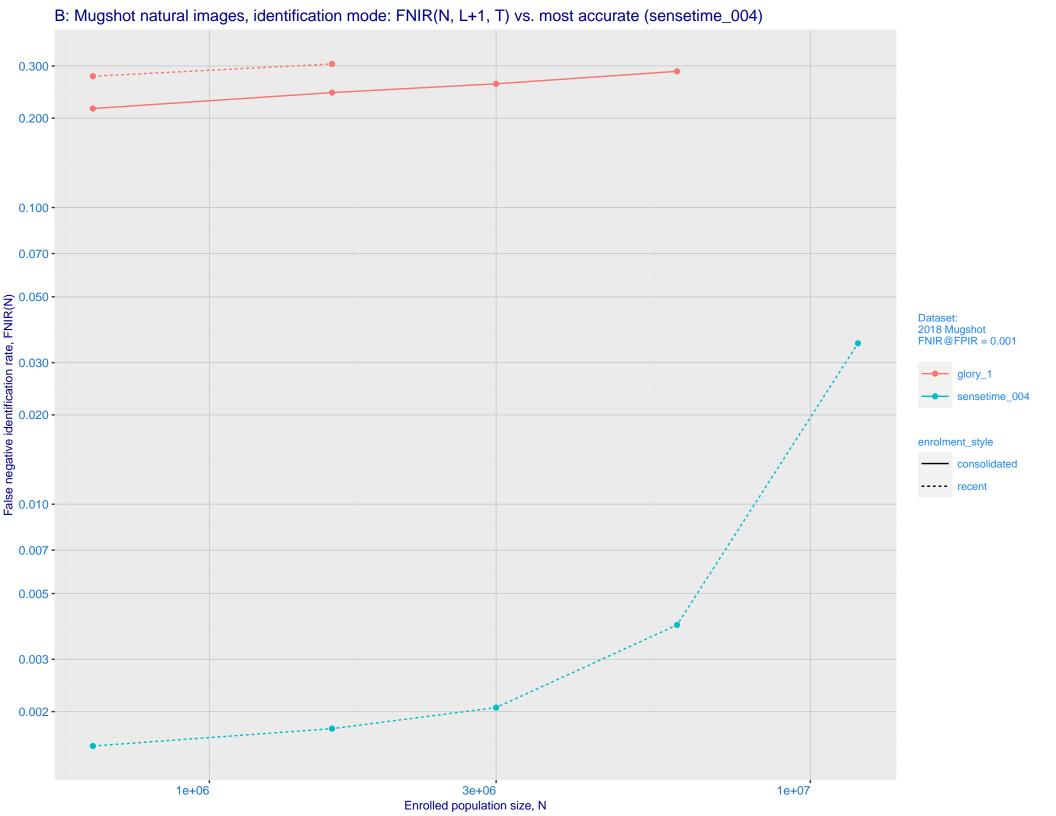
Frontal mugshot ranking 208 (out of 279) -- FNIR(1600000, T, L+1) = 0.3046, FPIR=0.001000 vs. lowest 0.0018 from sensetime\_004

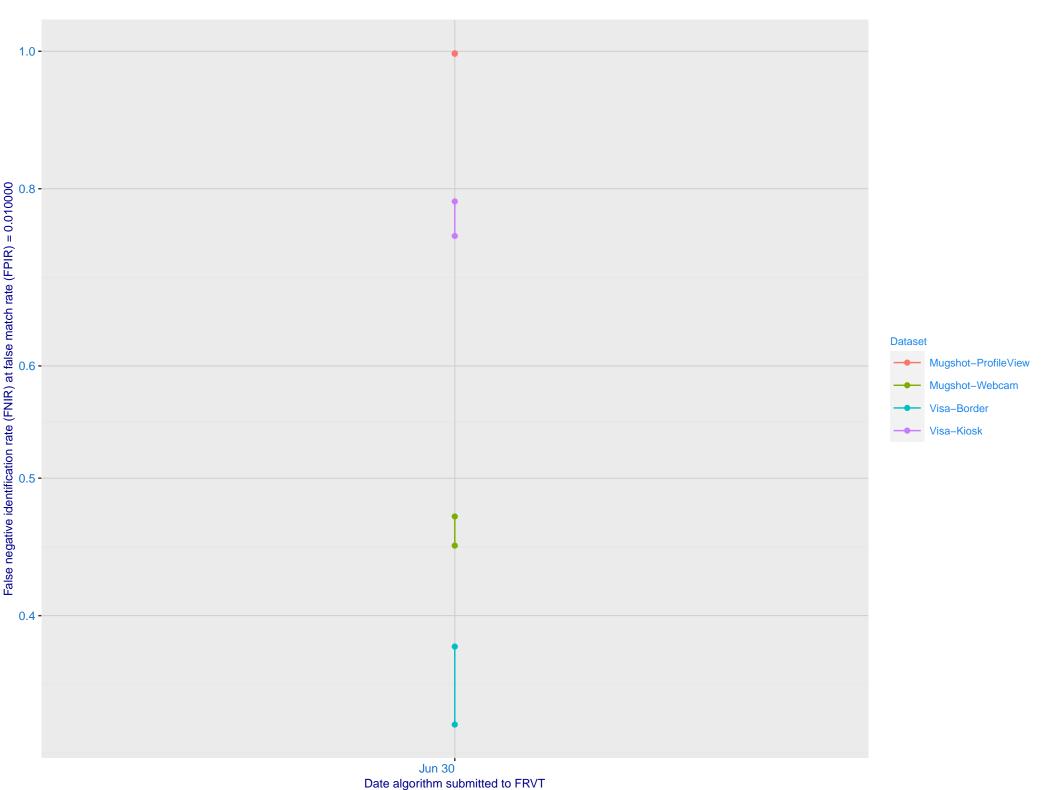
Mugshot webcam ranking 194 (out of 236) -- FNIR(1600000, T, L+1) = 0.5372, FPIR=0.001000 vs. lowest 0.0122 from sensetime\_003

Mugshot profile ranking 94 (out of 209) -- FNIR(1600000, T, L+1) = 0.9933, FPIR=0.001000 vs. lowest 0.1331 from cloudwalk\_hr\_000

Immigration visa-border ranking 115 (out of 167) -- FNIR(1600000, T, L+1) = 0.4084, FPIR=0.001000 vs. lowest 0.0047 from idemia\_008

Immigration visa-kiosk ranking 103 (out of 162) -- FNIR(1600000, T, L+1) = 0.8196, FPIR=0.001000 vs. lowest 0.0996 from cloudwalk\_hr\_000

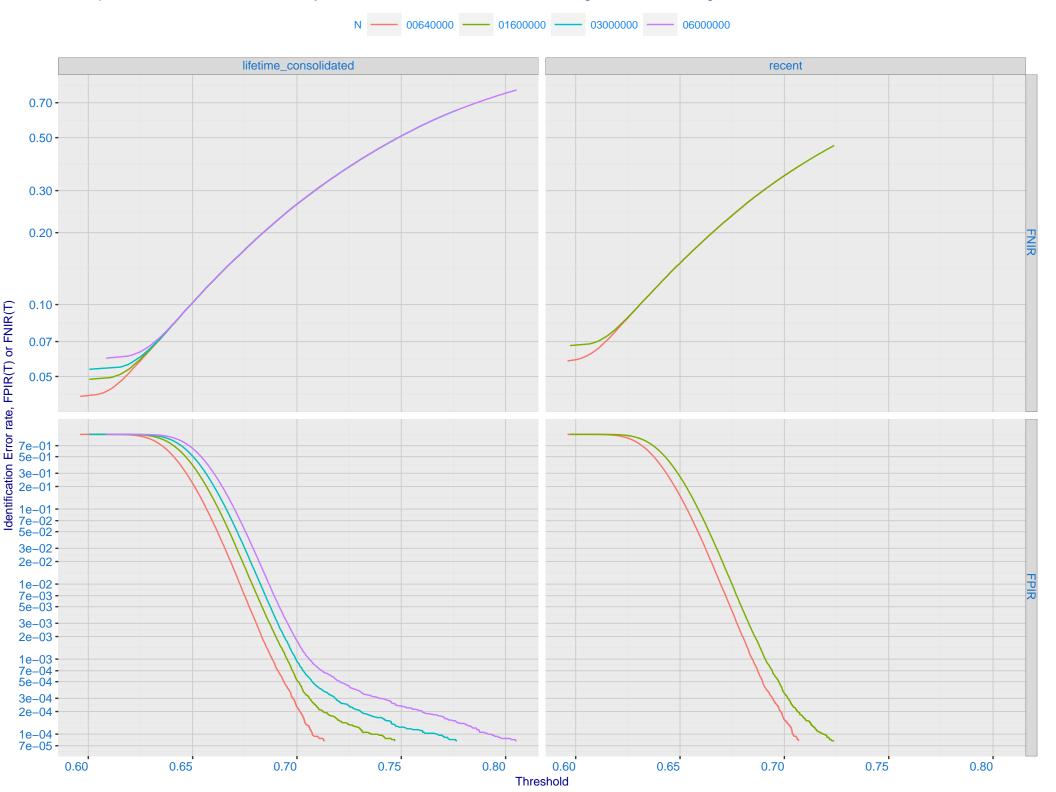




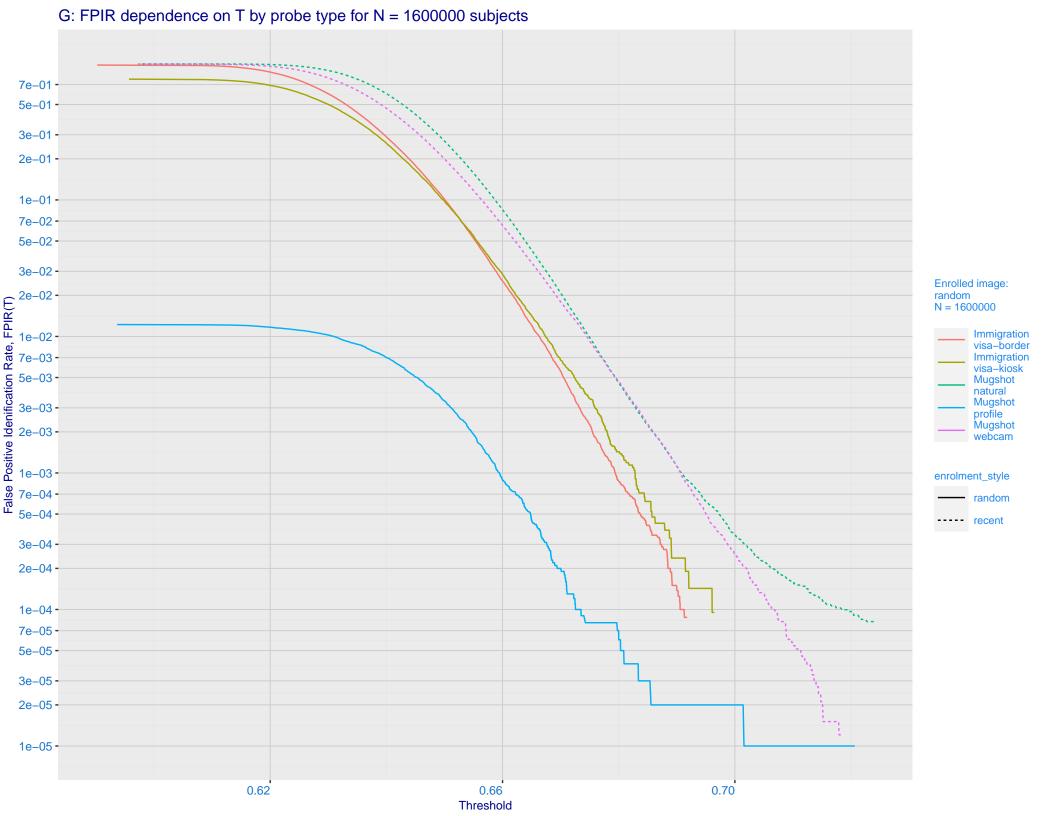
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.000 - 0.000 - 0.200 - 0. enrolment\_style 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 --03e-021e-03e-011e+001e-03e-04e-03e-03e-03e-021e-03e-011e+00

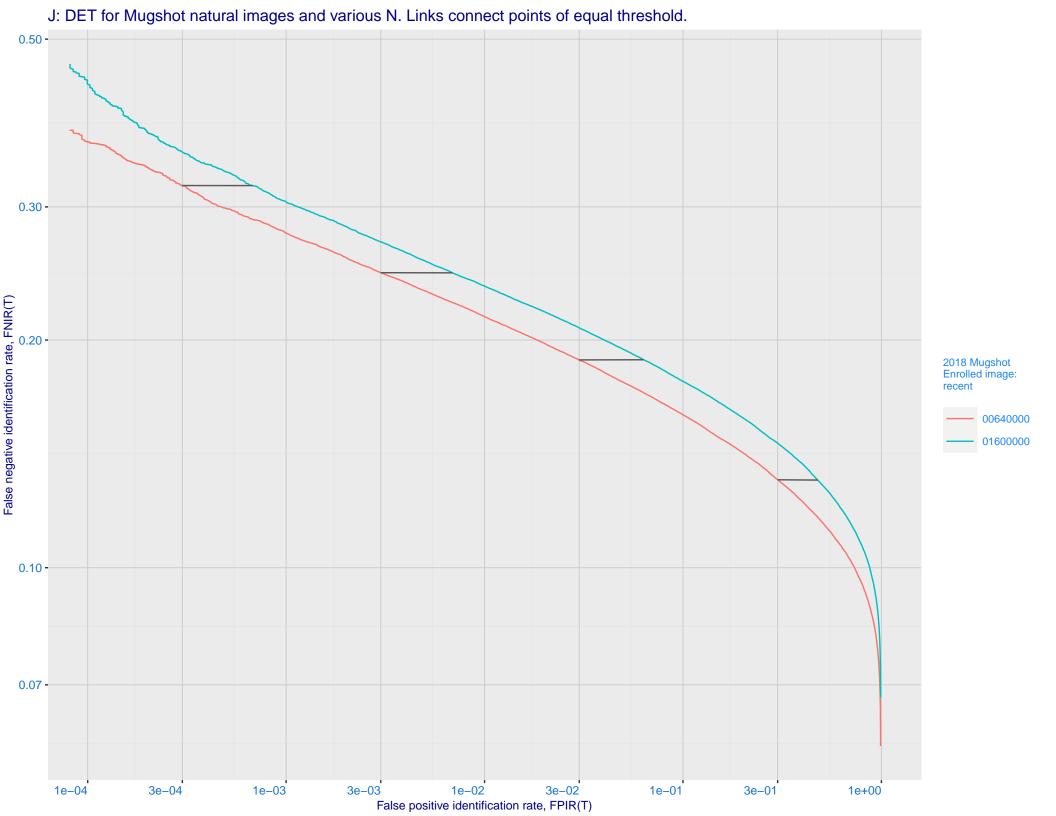
False positive identification rate, FPIR(T)

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 -5e-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)

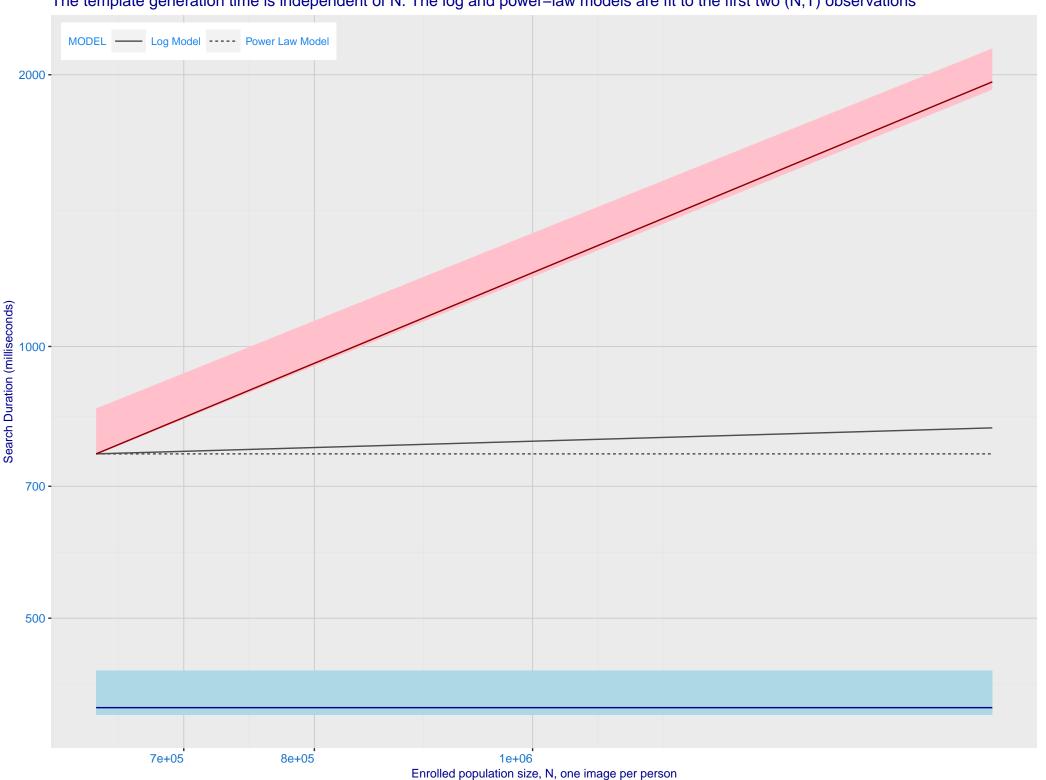




K: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime\_005) Immigration **Immigration** visa-border visa-kiosk 0.700 -• 0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Ealse negative identification rate, FNIR(N) 0.003 - 0.001 - 0.700 - 0.500 - 0.200 - 0. FNIR@Rank = 1 glory\_1 sensetime\_005 Mugshot Mugshot webcam natural enrolment\_style consolidated ---- random --- recent 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 glory\_1 sensetime\_005 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 - 0.050 - 0.000 enrolment\_style lifetime\_consolidated ---- random --- recent FNIR(R) N = 1600000 Immigration visa-border Immigration visa-kiosk Mugshot natural Mugshot 0.007 webcam 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



