## 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 223 (out of 265) -- FNIR(1600000, 0, 1) = 0.1268 vs. lowest 0.0009 from sensetime\_005

Mugshot webcam ranking 200 (out of 227) -- FNIR(1600000, 0, 1) = 0.2670 vs. lowest 0.0062 from sensetime\_005

Mugshot profile ranking 187 (out of 196) — FNIR(1600000, 0, 1) = 0.9918 vs. lowest 0.0591 from sensetime\_005

Immigration visa-border ranking 115 (out of 148) -- FNIR(1600000, 0, 1) = 0.1779 vs. lowest 0.0013 from visionlabs\_010

Immigration visa-kiosk ranking 126 (out of 145) — FNIR(1600000, 0, 1) = 0.5936 vs. lowest 0.0568 from hr\_000

Identification:

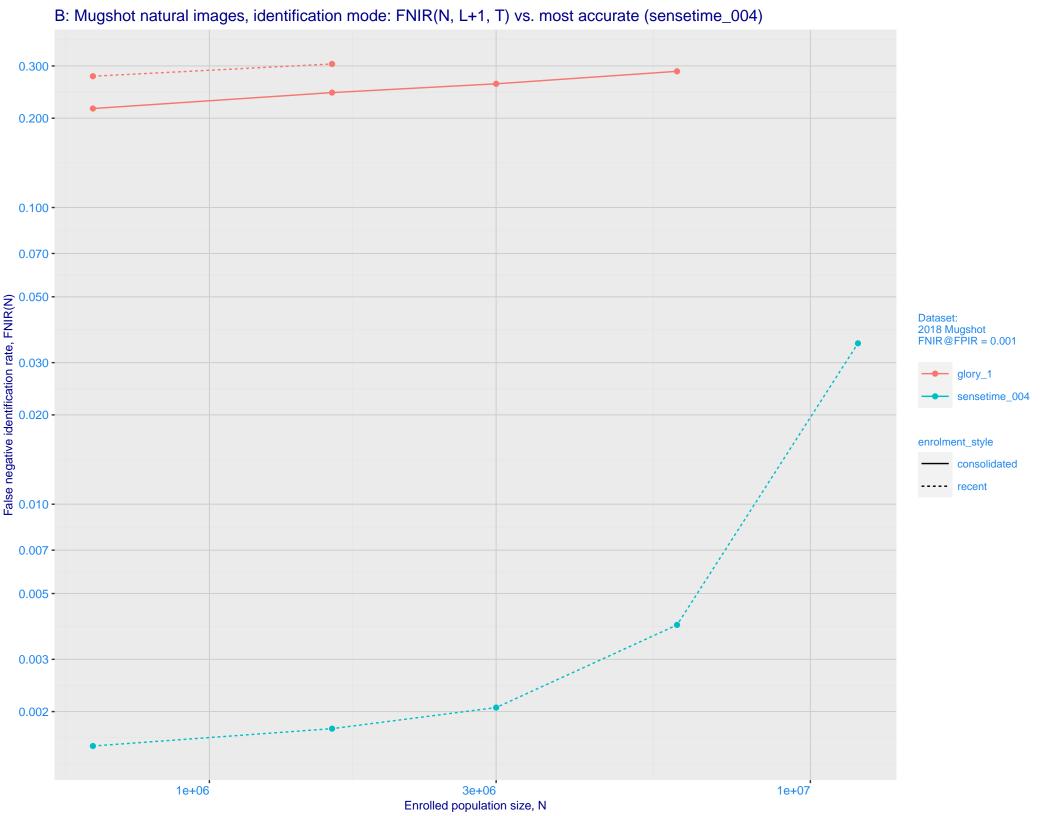
Frontal mugshot ranking 196 (out of 265) -- FNIR(1600000, T, L+1) = 0.3046, FPIR=0.001000 vs. lowest 0.0018 from sensetime\_004

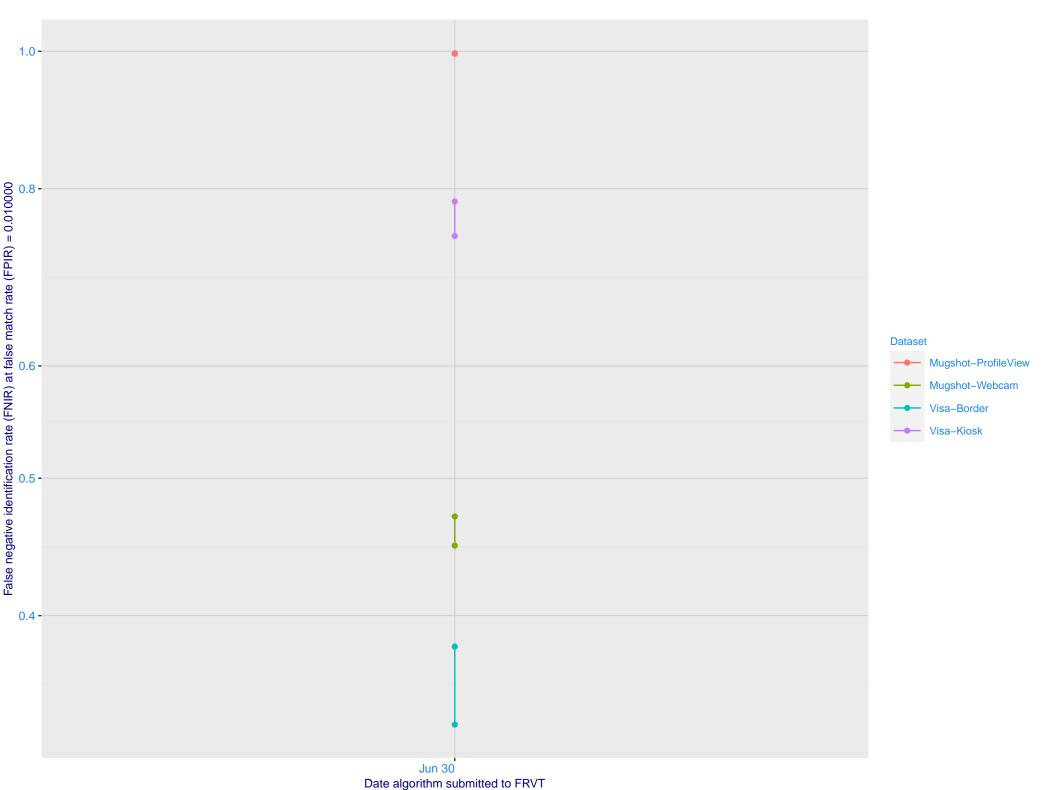
Mugshot webcam ranking 184 (out of 225) -- FNIR(1600000, T, L+1) = 0.5372, FPIR=0.001000 vs. lowest 0.0122 from sensetime\_003

Mugshot profile ranking 87 (out of 195) -- FNIR(1600000, T, L+1) = 0.9933, FPIR=0.001000 vs. lowest 0.1331 from hr\_000

Immigration visa-border ranking 98 (out of 146) -- FNIR(1600000, T, L+1) = 0.4084, FPIR=0.001000 vs. lowest 0.0049 from hr\_000

Immigration visa-kiosk ranking 91 (out of 141) — FNIR(1600000, T, L+1) = 0.8196, FPIR=0.001000 vs. lowest 0.0996 from hr\_000

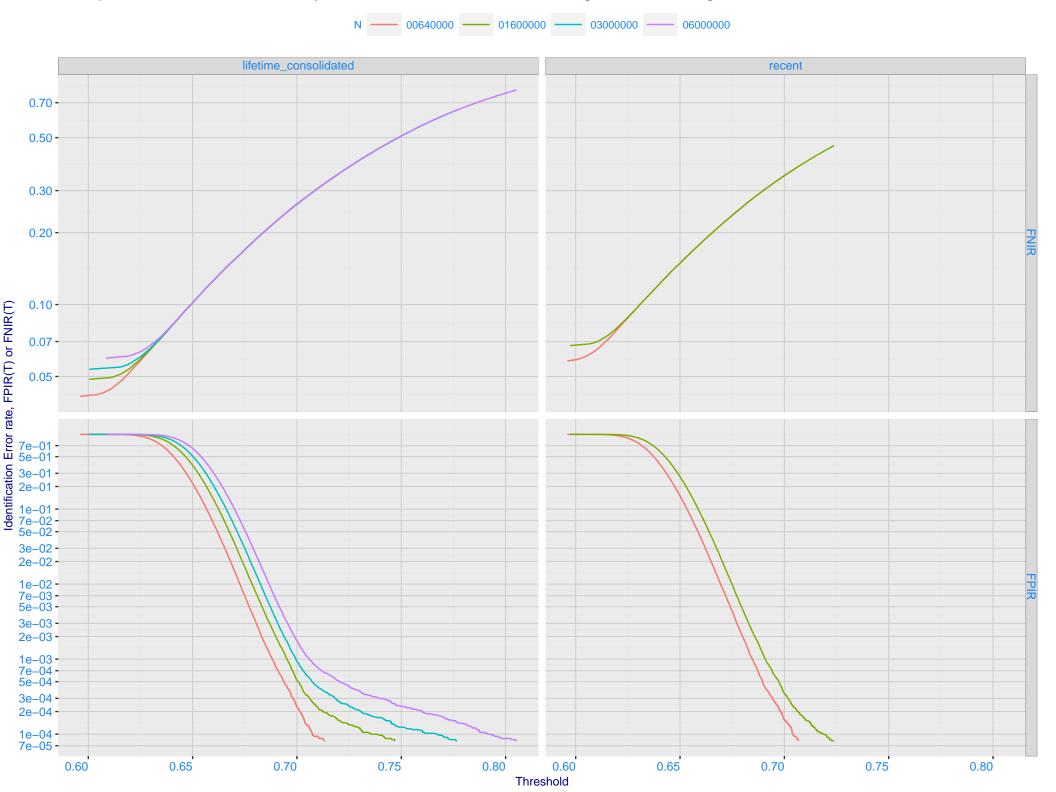




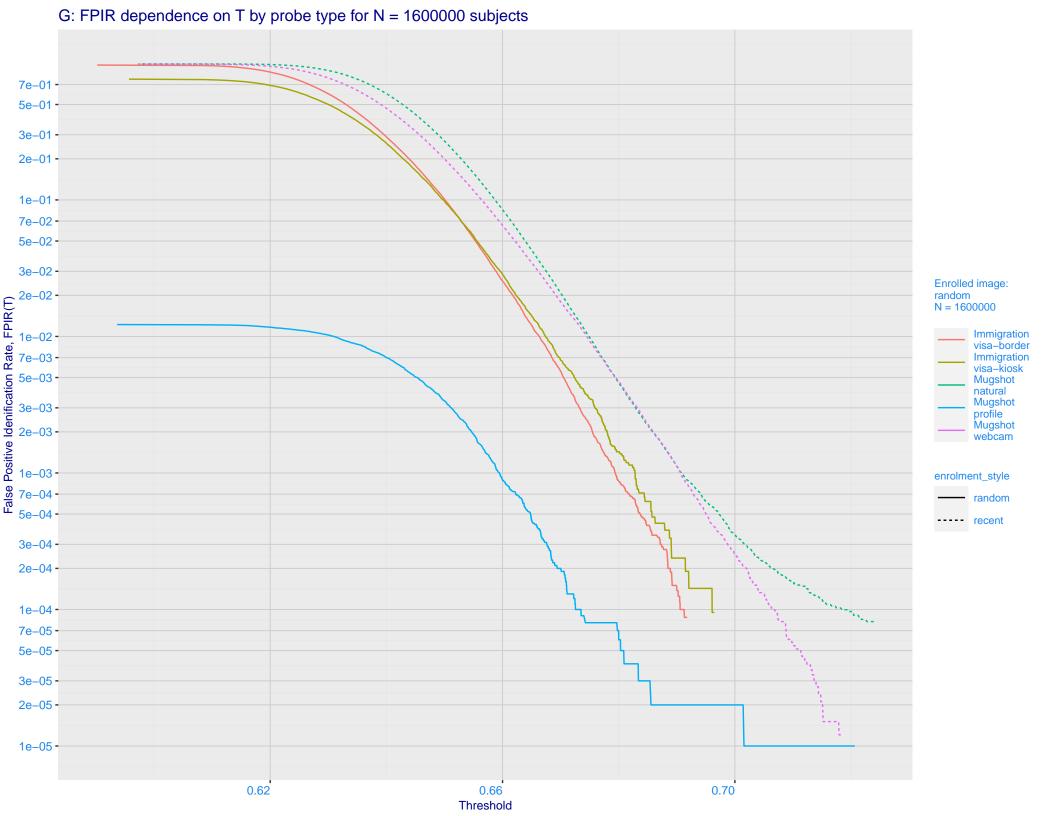
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.000 - 0.000 - 0.500 - 0.200 - 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 -

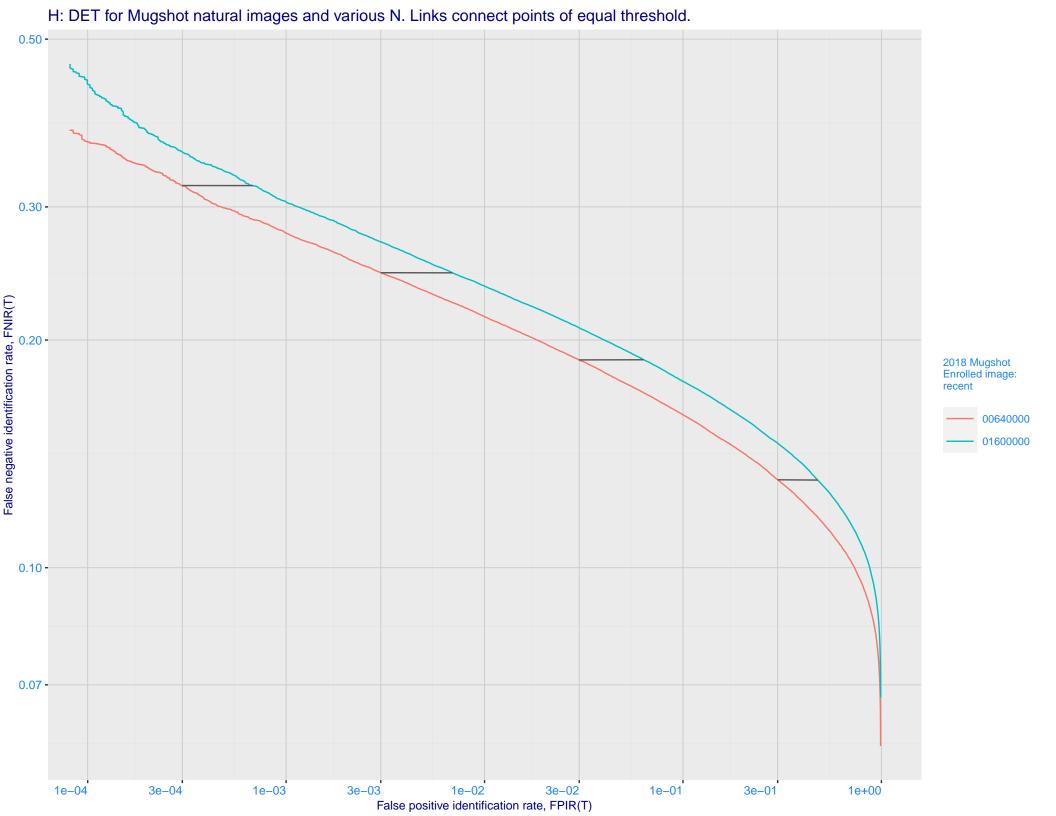
False positive identification rate, FPIR(T)

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 -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)

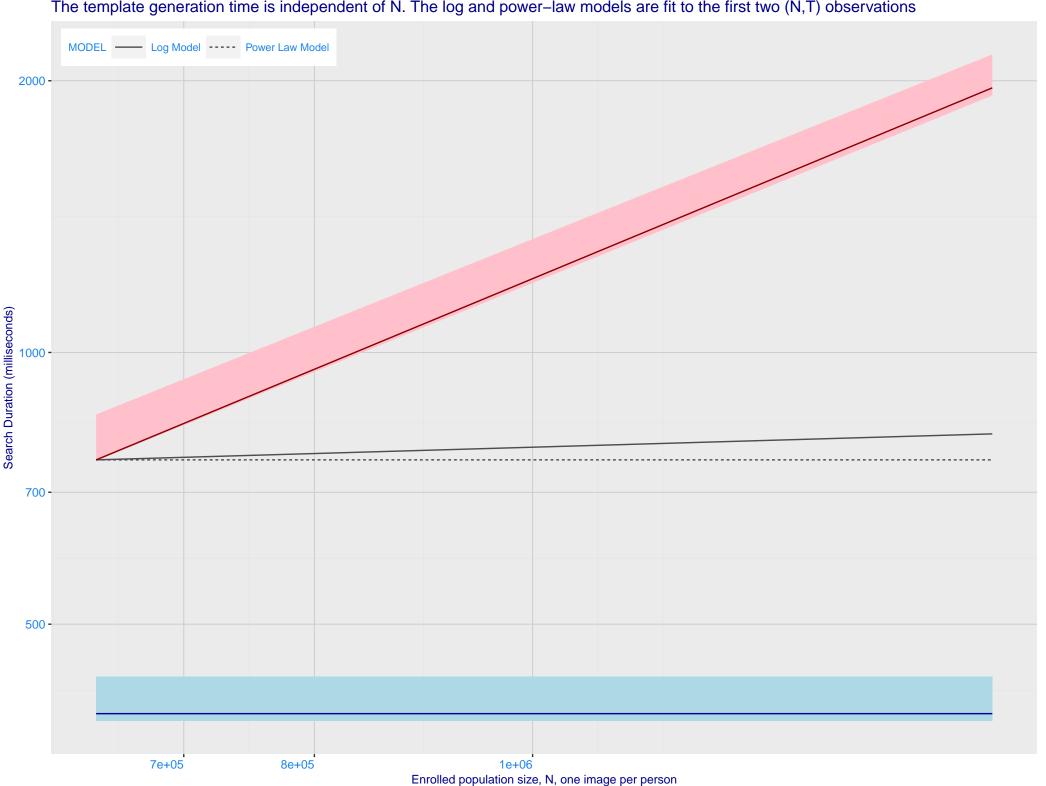




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime\_005) Immigration **Immigration** visa-border visa-kiosk 0.700 -• 0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Ealse negative identification rate, FNIR(N) 0.003 - 0.001 - 0.500 - 0.500 - 0.200 - 0. FNIR@Rank = 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

J: 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 - 0.050 - 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 10 30 Rank, R

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



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



