A: Datasheet

Algorithm: imagus_2

Developer: Imagus Technology Pty Ltd

Submission Date: 2018_06_21

Template size: 512 bytes

Template time (2.5 percentile): 62 msec

Template time (median): 69 msec

Template time (97.5 percentile): 85 msec

Investigation:

Frontal mugshot ranking 236 (out of 259) -- FNIR(1600000, 0, 1) = 0.2203 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 195 (out of 221) -- FNIR(1600000, 0, 1) = 0.3007 vs. lowest 0.0062 from sensetime_005

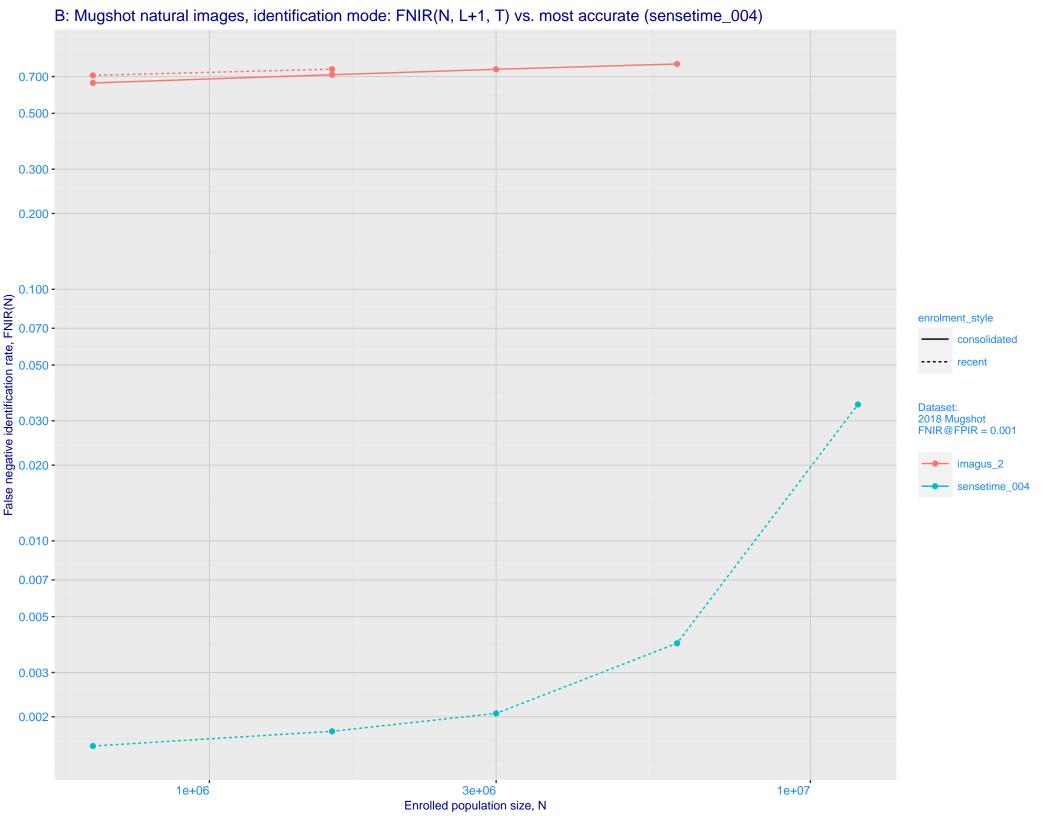
Mugshot profile ranking 179 (out of 190) -- FNIR(1600000, 0, 1) = 0.9880 vs. lowest 0.0591 from sensetime_005

Identification:

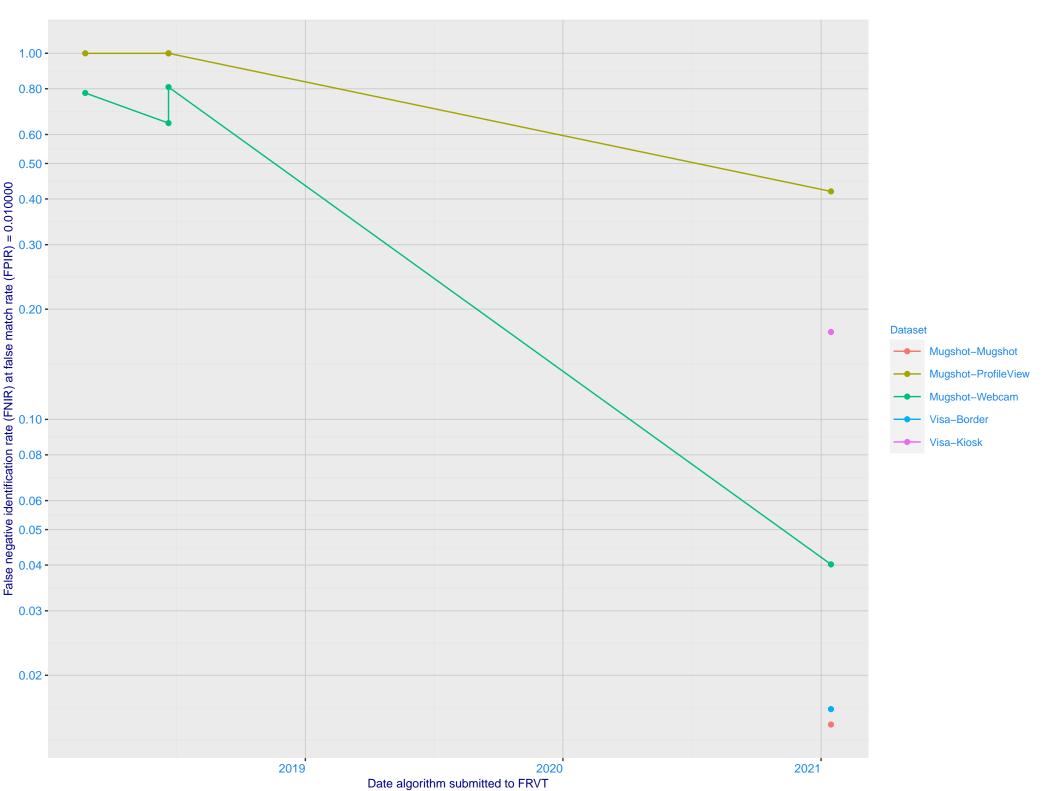
Frontal mugshot ranking 233 (out of 259) -- FNIR(1600000, T, L+1) = 0.7491, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 196 (out of 219) -- FNIR(1600000, T, L+1) = 0.8142, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

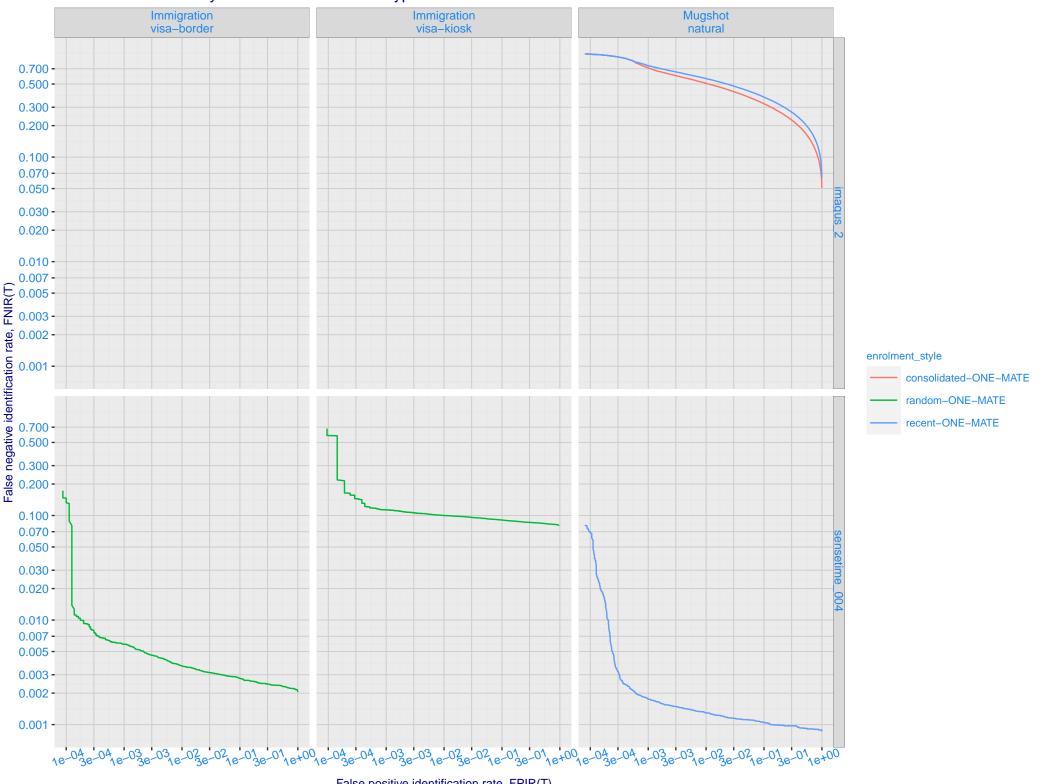
Mugshot profile ranking 170 (out of 189) -- FNIR(1600000, T, L+1) = 0.9999, FPIR=0.001000 vs. lowest 0.1733 from sensetime_005



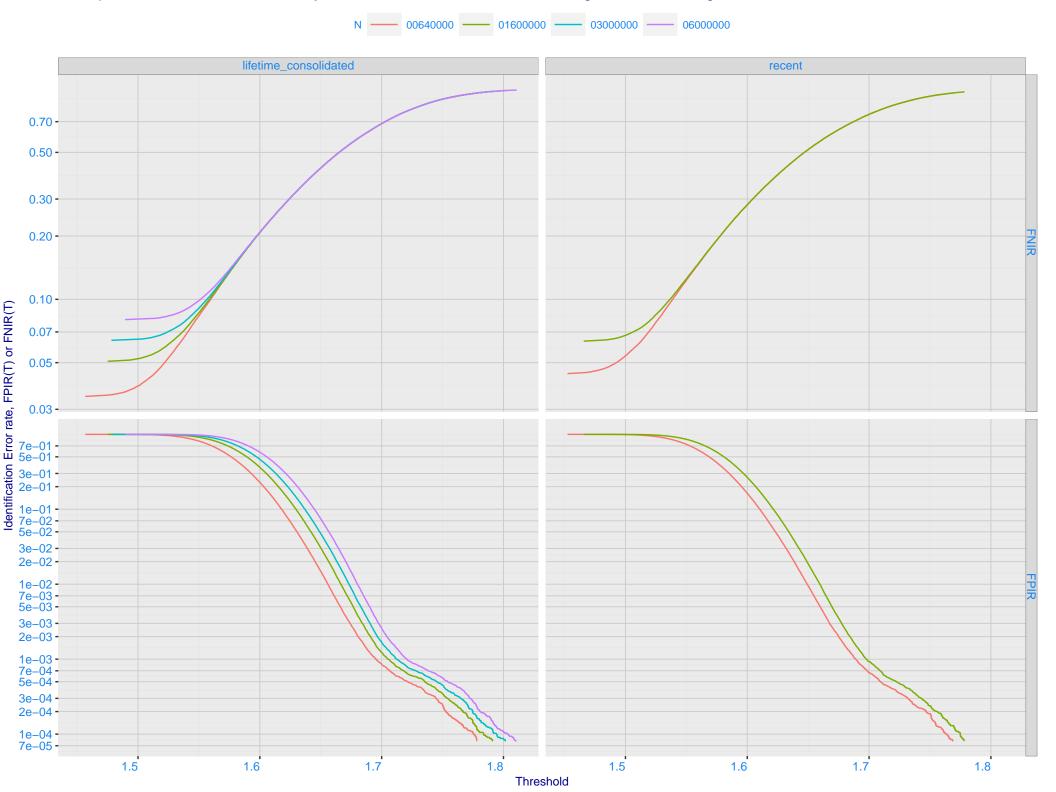
C: Evolution of accuracy for IMAGUS algorithms on three datasets 2018 – present



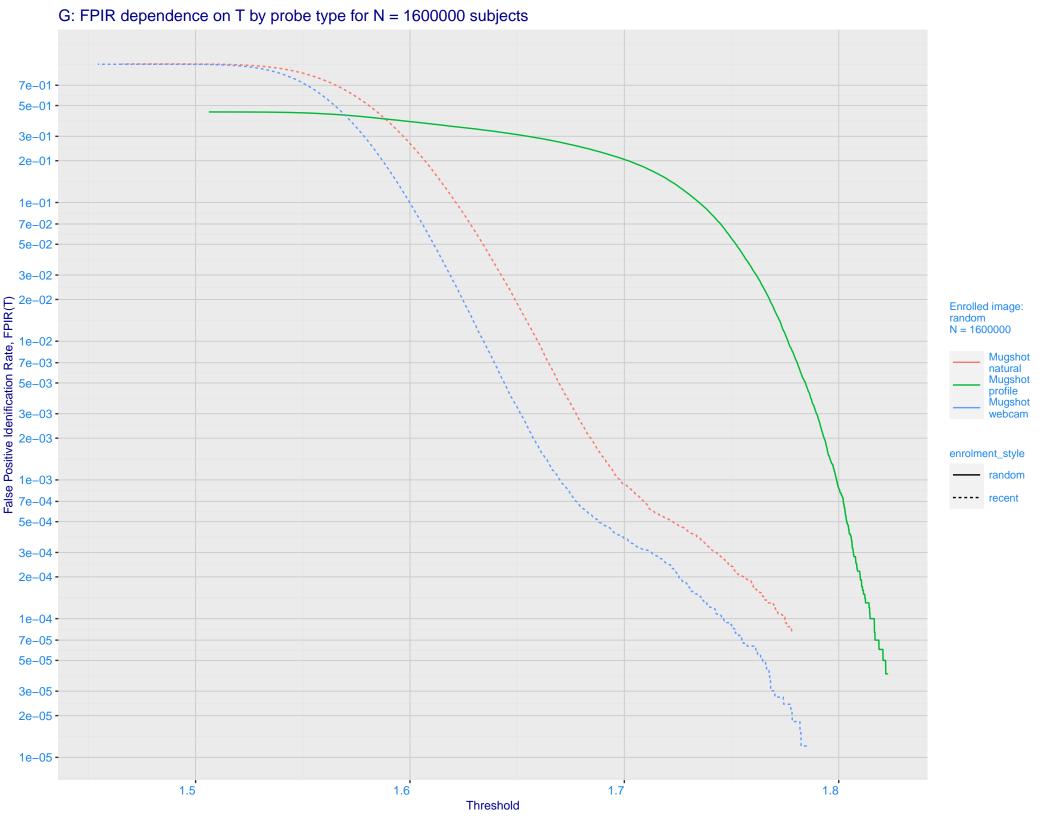
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals

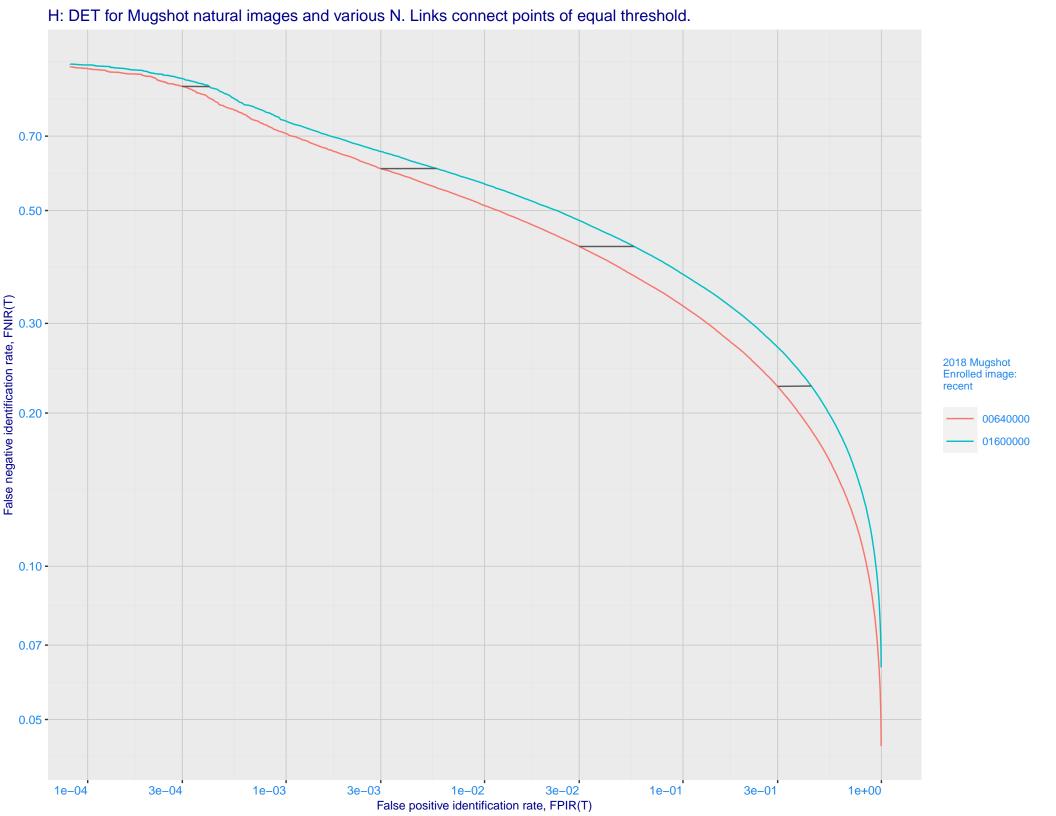


E: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



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)

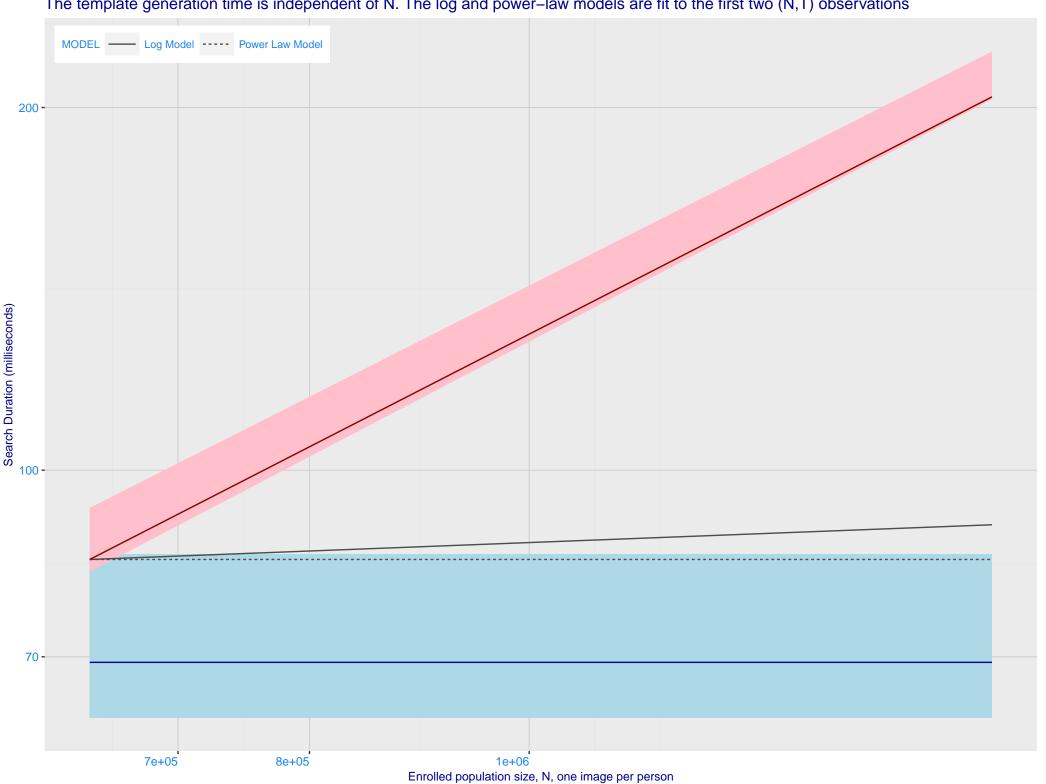




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Ealse negative identification rate, FNIR(N) 0.003 - 0.001 - 0.001 - 0.300 - 0.100 - 0.070 - 0. enrolment_style consolidated ---- random --- recent Mugshot natural Mugshot webcam FNIR@Rank = 1 imagus_2 sensetime_005 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 imagus_2 sensetime_005 0.300 -0.200 -0.100 -0.070 -0.050 enrolment_style False negative identification rate, FNIR(N) - 0.000 - lifetime_consolidated ---- random --- recent FNIR(R) N = 1600000 Immigration visa-border Immigration visa-kiosk Mugshot natural Mugshot webcam 0.005 -0.003 -0.002 -0.001 -10 30 3 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



