A: Datasheet

Algorithm: lookman_3

Developer: Lookman Electroplast Industries

Submission Date: 2018_10_28

Template size: 292 bytes

Template time (2.5 percentile): 334 msec

Template time (median): 336 msec

Template time (97.5 percentile): 367 msec

Investigation:

Frontal mugshot ranking 111 (out of 259) -- FNIR(1600000, 0, 1) = 0.0088 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 122 (out of 221) -- FNIR(1600000, 0, 1) = 0.0379 vs. lowest 0.0062 from sensetime_005

Immigration visa-border ranking 83 (out of 142) -- FNIR(1600000, 0, 1) = 0.0351 vs. lowest 0.0014 from visionlabs_009

Immigration visa-kiosk ranking 82 (out of 139) -- FNIR(1600000, 0, 1) = 0.2394 vs. lowest 0.0694 from cib_000

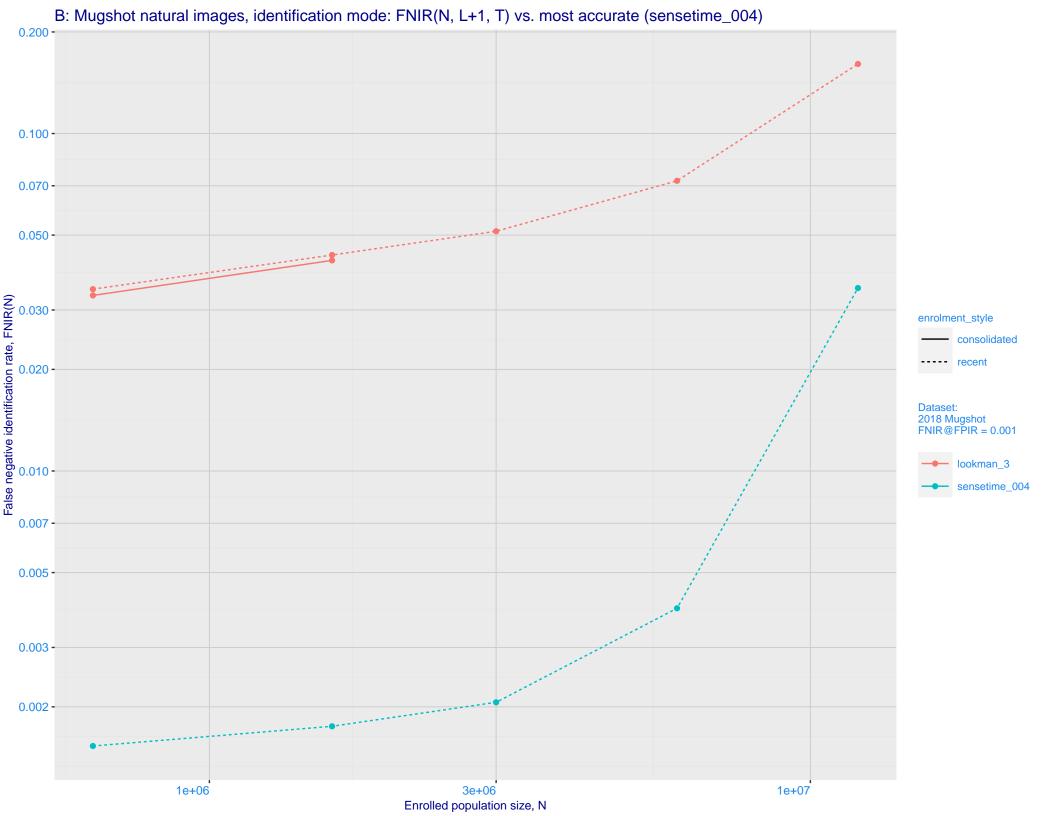
Identification:

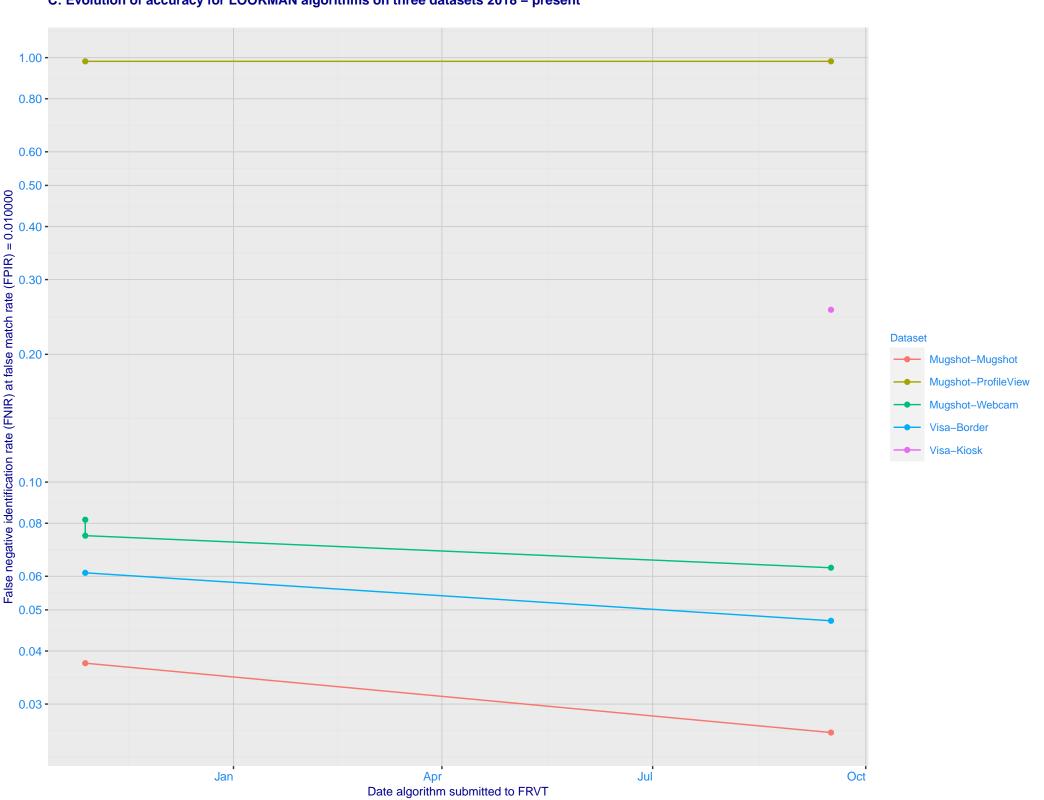
Frontal mugshot ranking 63 (out of 259) -- FNIR(1600000, T, L+1) = 0.0437, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 70 (out of 219) -- FNIR(1600000, T, L+1) = 0.1123, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Immigration visa-border ranking 60 (out of 139) -- FNIR(1600000, T, L+1) = 0.0841, FPIR=0.001000 vs. lowest 0.0059 from sensetime_004

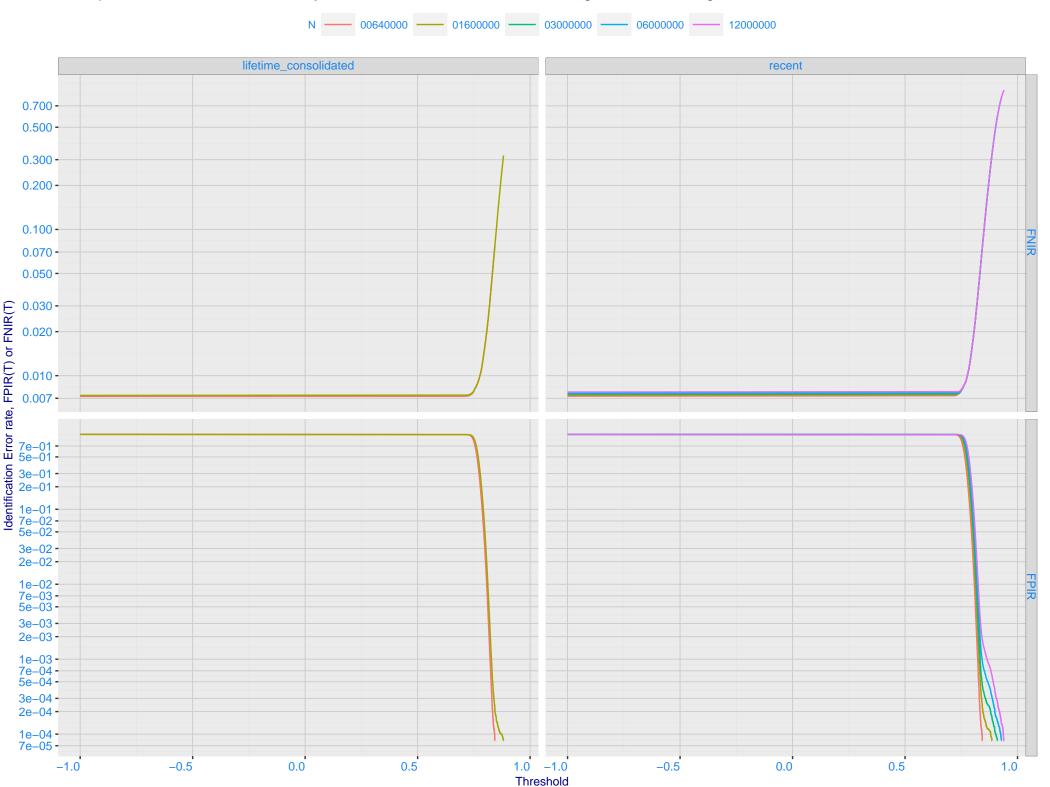
Immigration visa-kiosk ranking 44 (out of 134) -- FNIR(1600000, T, L+1) = 0.3572, FPIR=0.001000 vs. lowest 0.1048 from sensetime_005



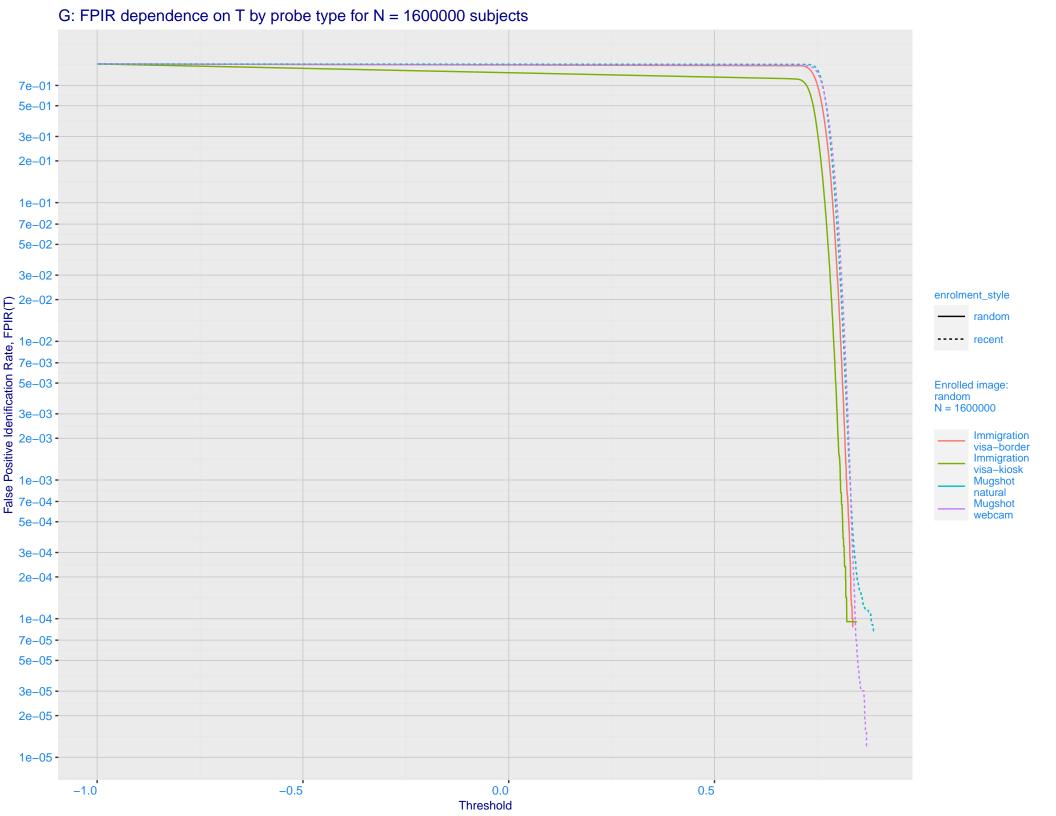


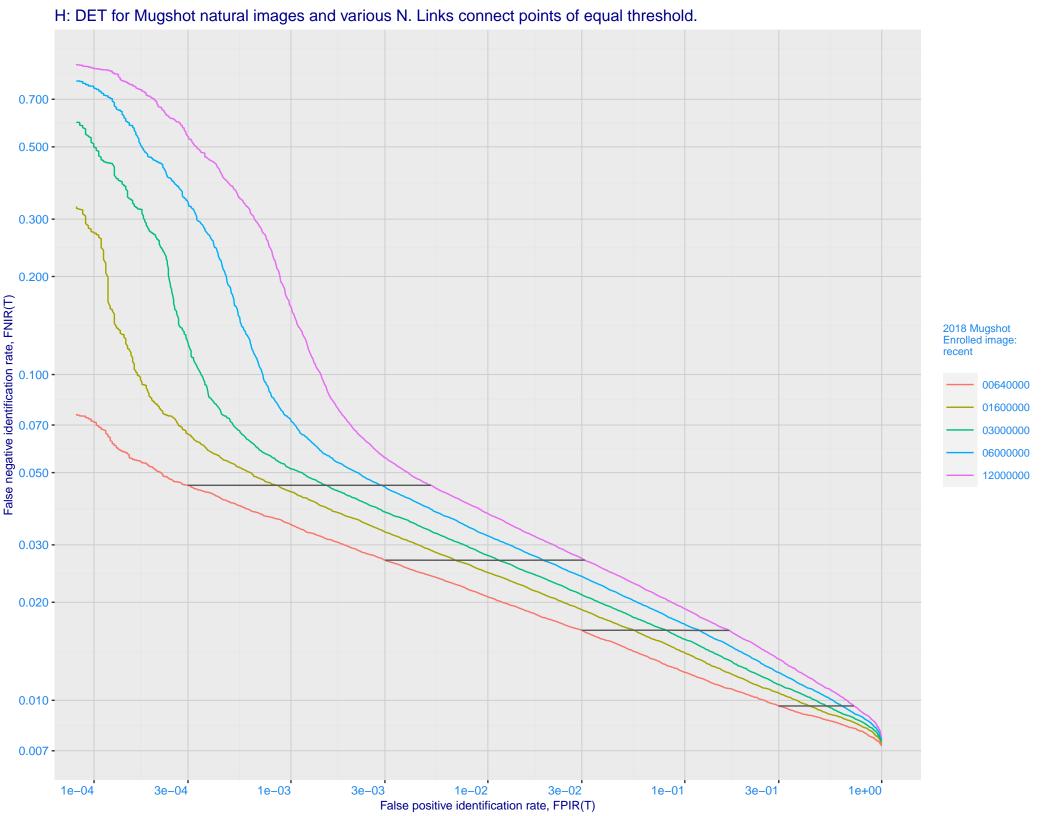
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration** Mugshot **Immigration** visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.0001 - 0.700 - 0.500 - 0.200 - 0.100 - 0 enrolment_style consolidated-ONE-MATE random-ONE-MATE recent-ONE-MATE unconsolidated-ALL-MATES unconsolidated-ANY-MATE 0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -0.002 -0.001 -

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)

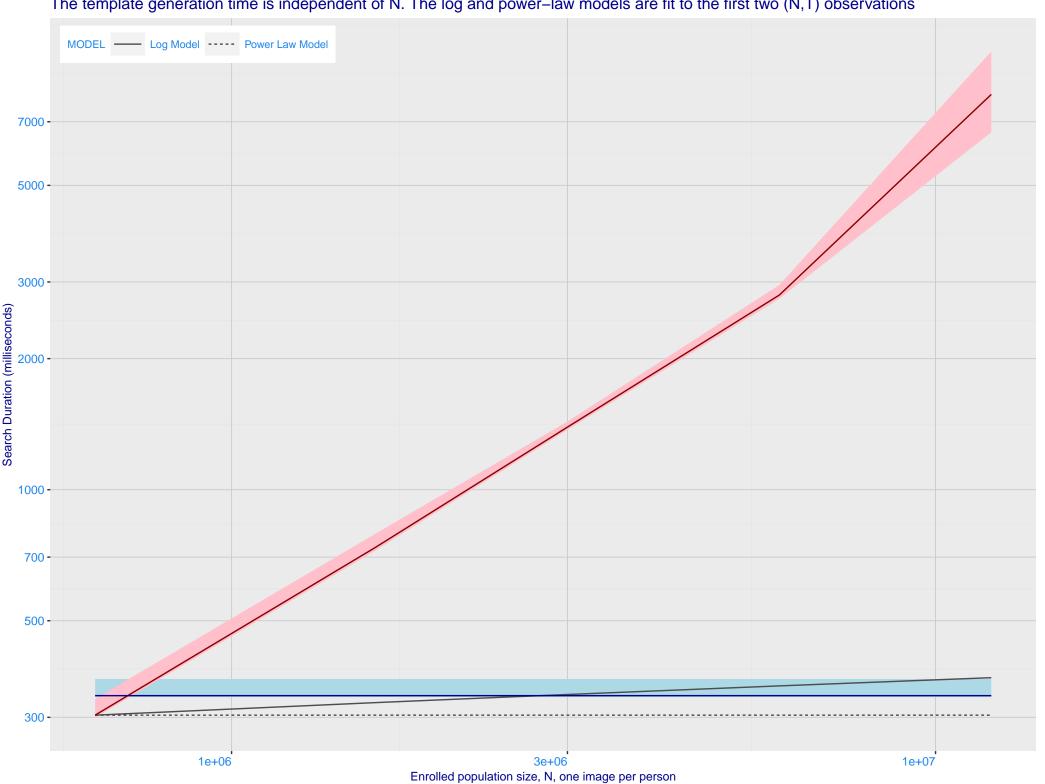




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Palse negative identification rate, FNIR(N) 0.002 - 0.001 - 0.300 - 0.100 - 0.070 - 0. enrolment_style consolidated ---- random --- recent Mugshot webcam Mugshot natural FNIR@Rank = 1 lookman_3 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 lookman_3 sensetime_005 0.300 -0.200 -0.100 -0.070 -0.050 enrolment_style False negative identification rate, FNIR(N) 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



