## A: Datasheet

Algorithm: lookman\_4

Developer: Lookman Electroplast Industries

Submission Date: 2018\_10\_28

Template size: 548 bytes

Template time (2.5 percentile): 318 msec

Template time (median): 320 msec

Template time (97.5 percentile): 349 msec

Investigation:

Frontal mugshot ranking 114 (out of 259) -- FNIR(1600000, 0, 1) = 0.0091 vs. lowest 0.0009 from sensetime\_005

Mugshot webcam ranking 126 (out of 221) -- FNIR(1600000, 0, 1) = 0.0394 vs. lowest 0.0062 from sensetime\_005

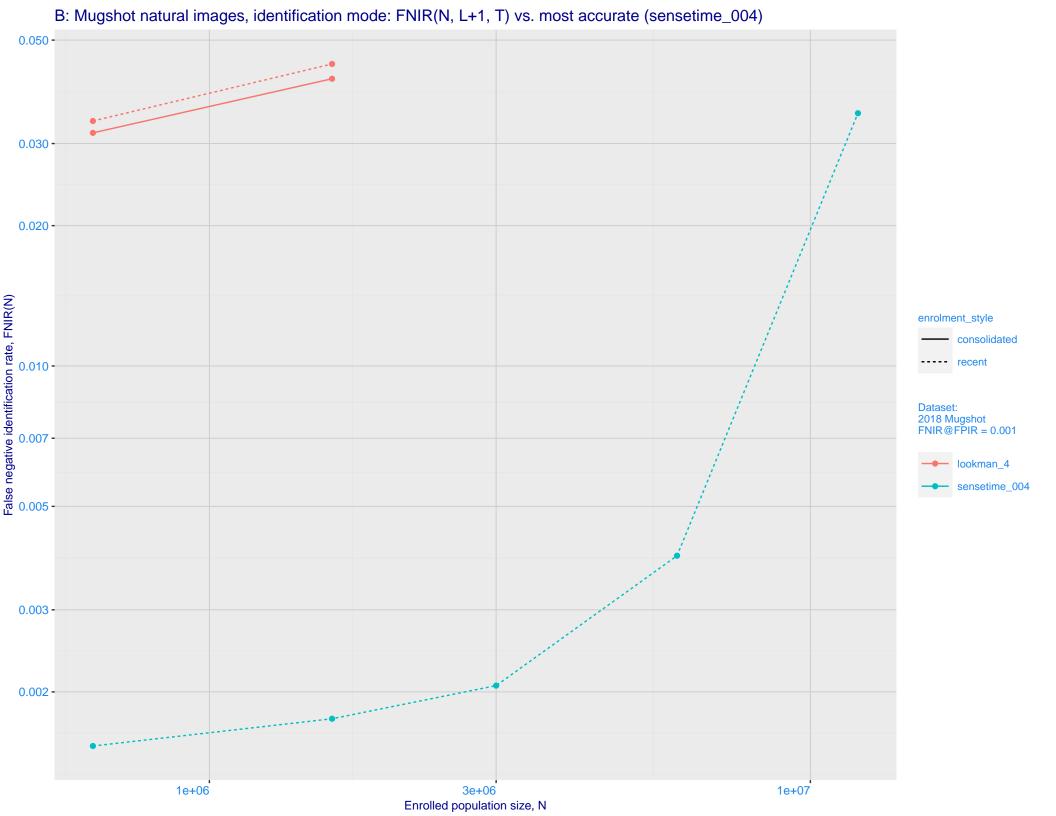
Mugshot profile ranking 167 (out of 190) -- FNIR(1600000, 0, 1) = 0.9732 vs. lowest 0.0591 from sensetime\_005

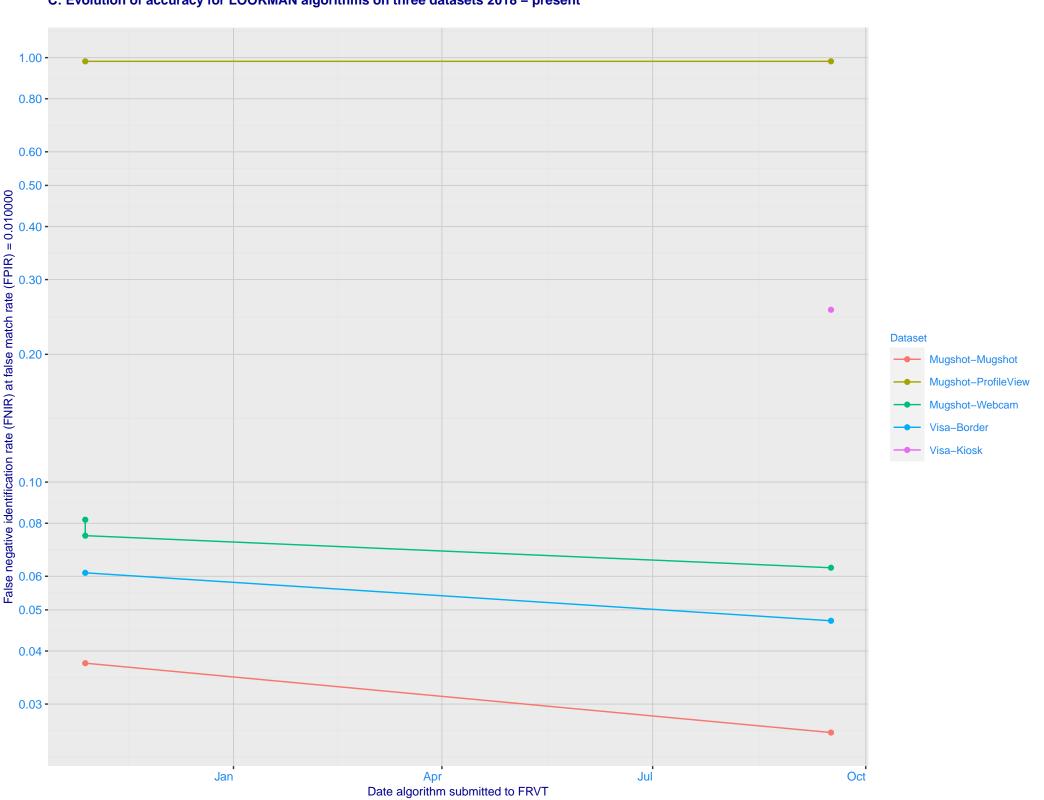
Identification:

Frontal mugshot ranking 67 (out of 259) -- FNIR(1600000, T, L+1) = 0.0444, FPIR=0.001000 vs. lowest 0.0018 from sensetime\_004

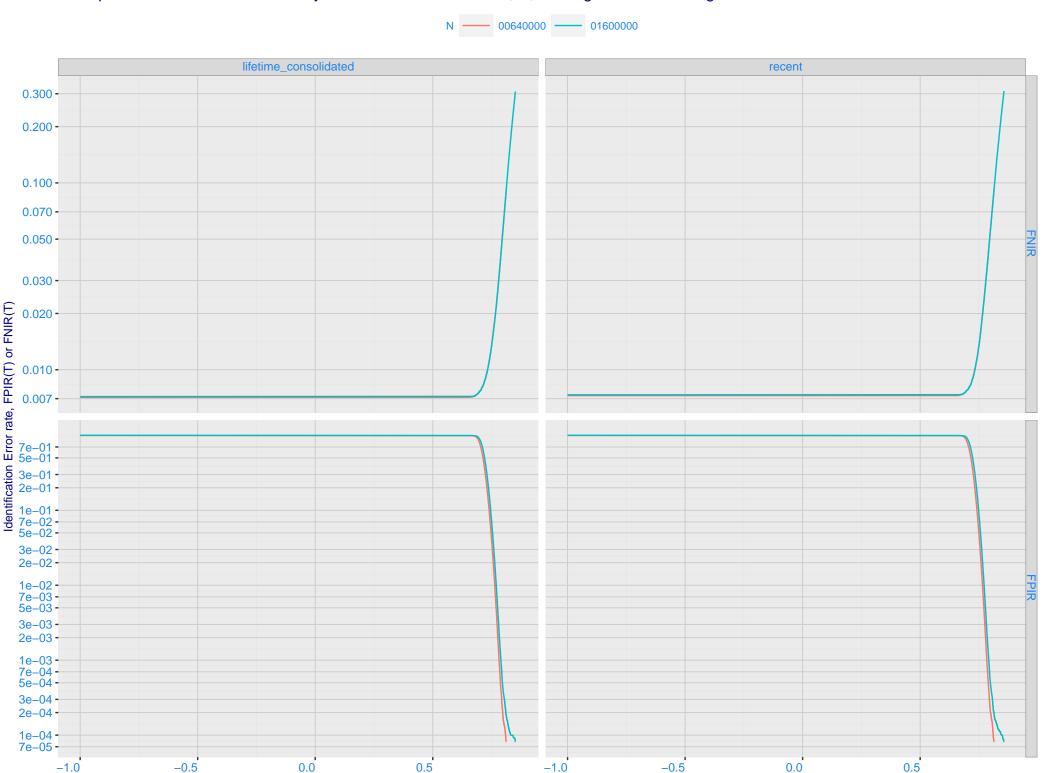
Mugshot webcam ranking 65 (out of 219) -- FNIR(1600000, T, L+1) = 0.1052, FPIR=0.001000 vs. lowest 0.0122 from sensetime\_003

Mugshot profile ranking 48 (out of 189) -- FNIR(1600000, T, L+1) = 0.9768, FPIR=0.001000 vs. lowest 0.1733 from sensetime\_005



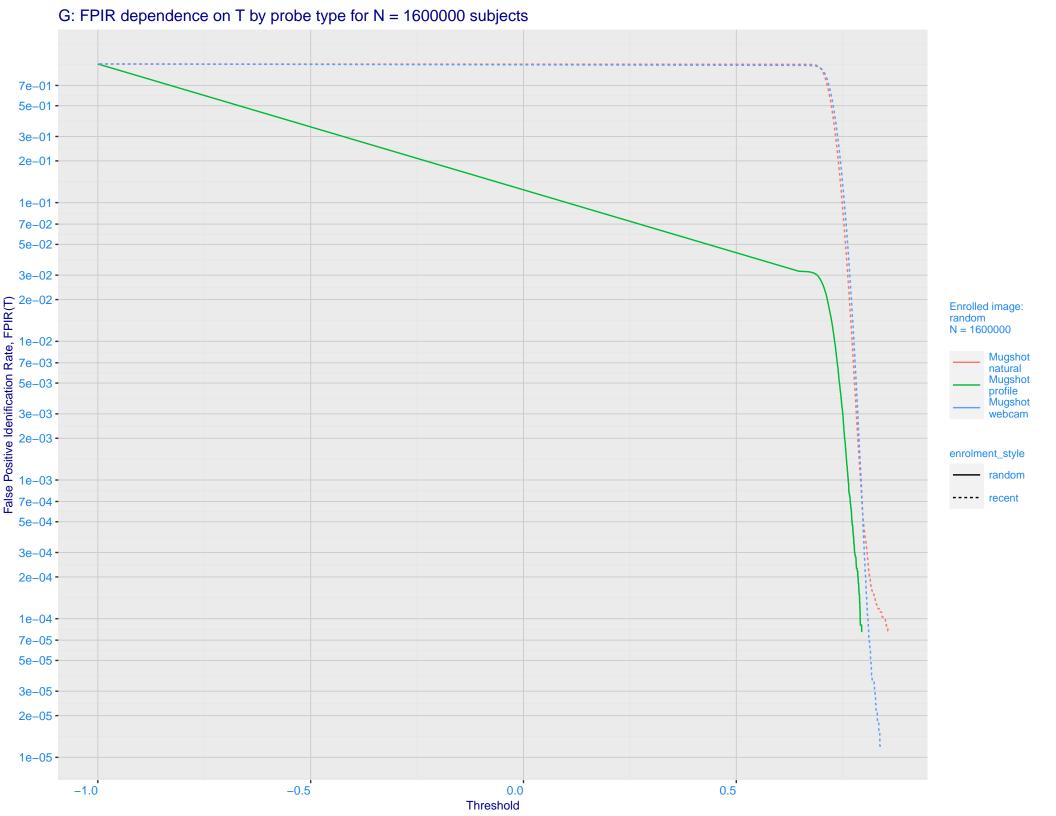


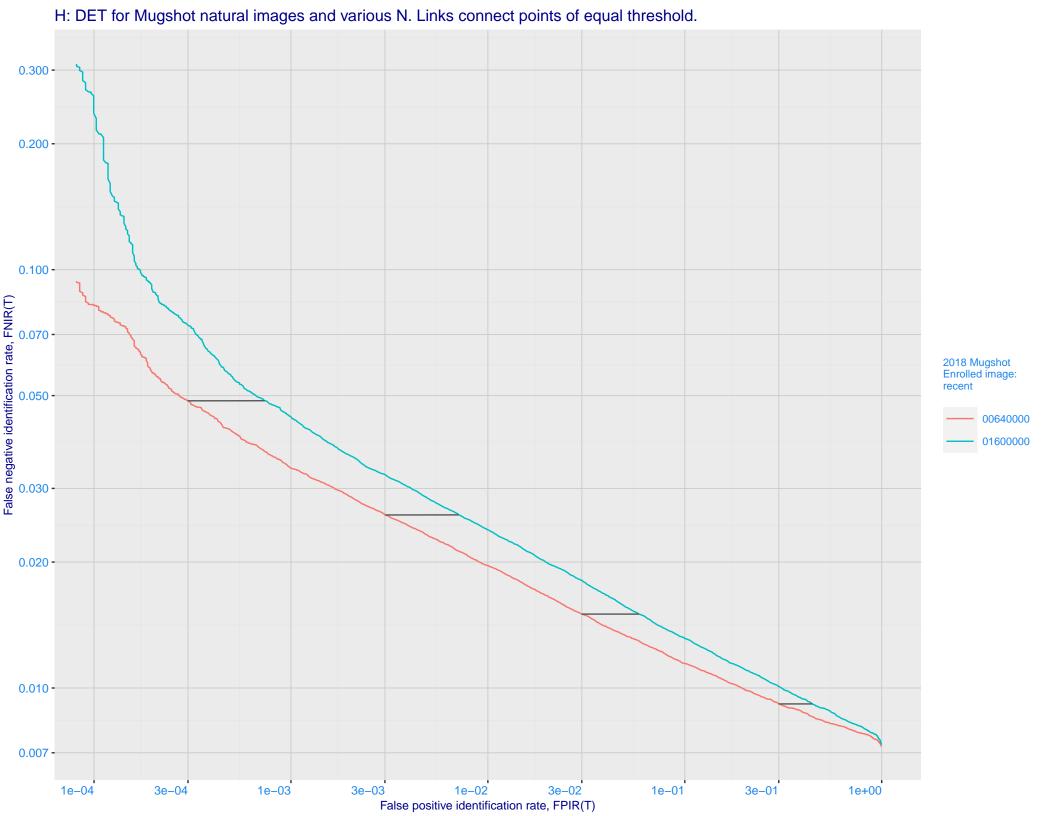
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration Immigration** Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.0001 - 0.700 - 0.500 - 0.200 - 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 -



Threshold

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)

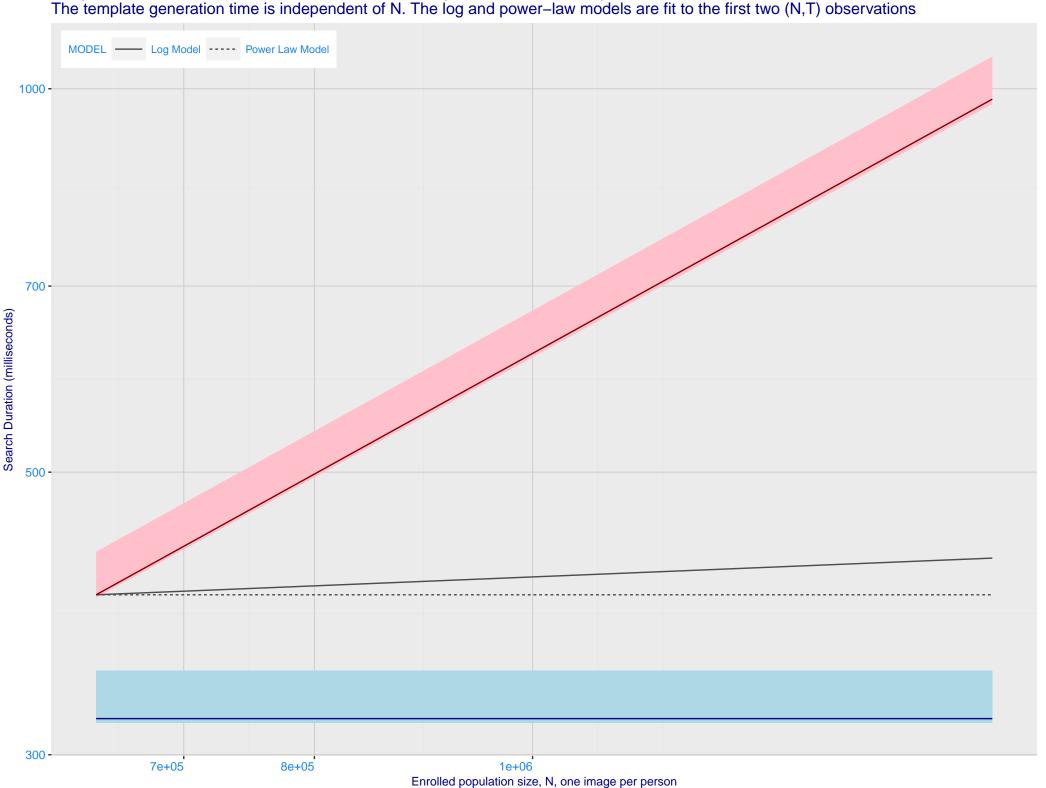




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime\_005) Immigration **Immigration** visa-border visa-kiosk 0.100 0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -Palse negative identification rate, FNIR(N) 0.002 - 0.001 - 0.000 - 0.050 - 0.050 - 0.030 - 0. enrolment\_style consolidated ---- random --- recent Mugshot Mugshot webcam natural FNIR@Rank = 1 lookman\_4 - sensetime\_005 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\_4 sensetime\_005 0.100 -0.070 -0.050 -0.030 -0.020 enrolment\_style lifetime\_consolidated ---- random --- recent FNIR(R) N = 1600000 Immigration visa-border Immigration visa-kiosk Mugshot natural Mugshot webcam 0.003 -0.002 -0.001 -3 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



