## A: Datasheet

Algorithm: visionlabs\_5

Developer: VisionLabs

Submission Date: 2018\_06\_22

Template size: 512 bytes

Template time (2.5 percentile): 284 msec

Template time (median): 284 msec

Template time (97.5 percentile): 388 msec

Investigation:

Frontal mugshot ranking 41 (out of 265) -- FNIR(1600000, 0, 1) = 0.0024 vs. lowest 0.0009 from sensetime\_005

Mugshot webcam ranking 66 (out of 227) -- FNIR(1600000, 0, 1) = 0.0187 vs. lowest 0.0062 from sensetime\_005

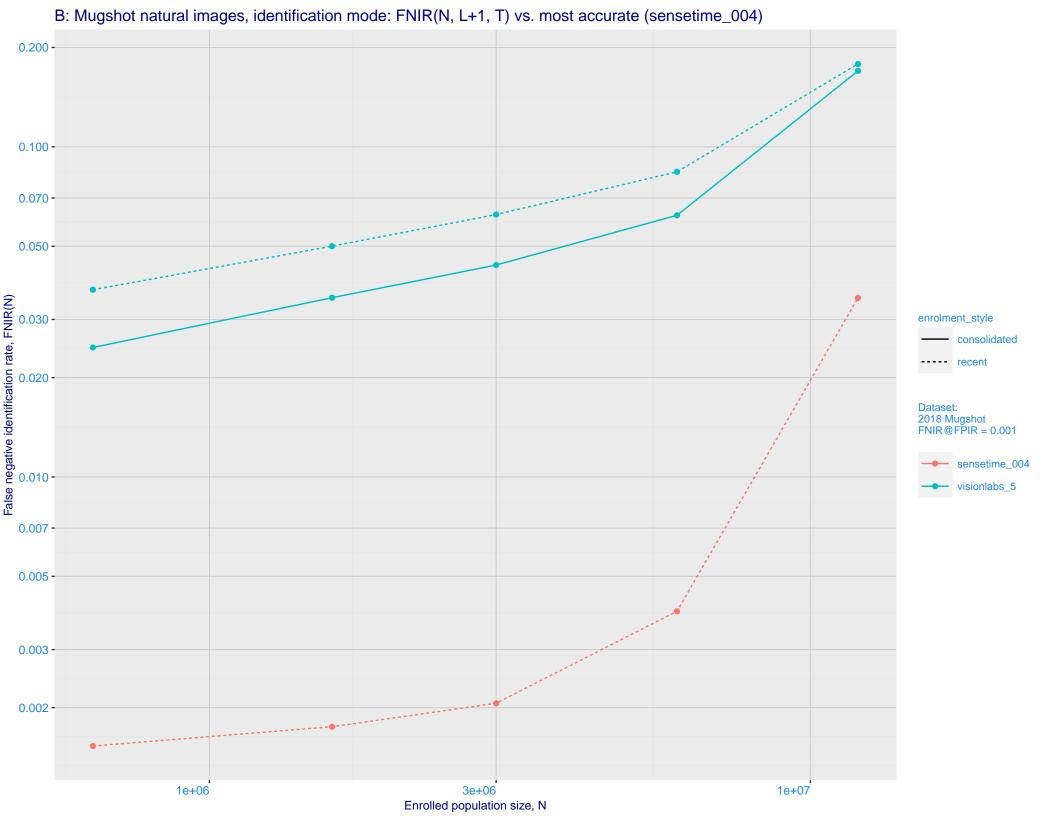
Mugshot profile ranking 30 (out of 196) -- FNIR(1600000, 0, 1) = 0.3342 vs. lowest 0.0591 from sensetime\_005

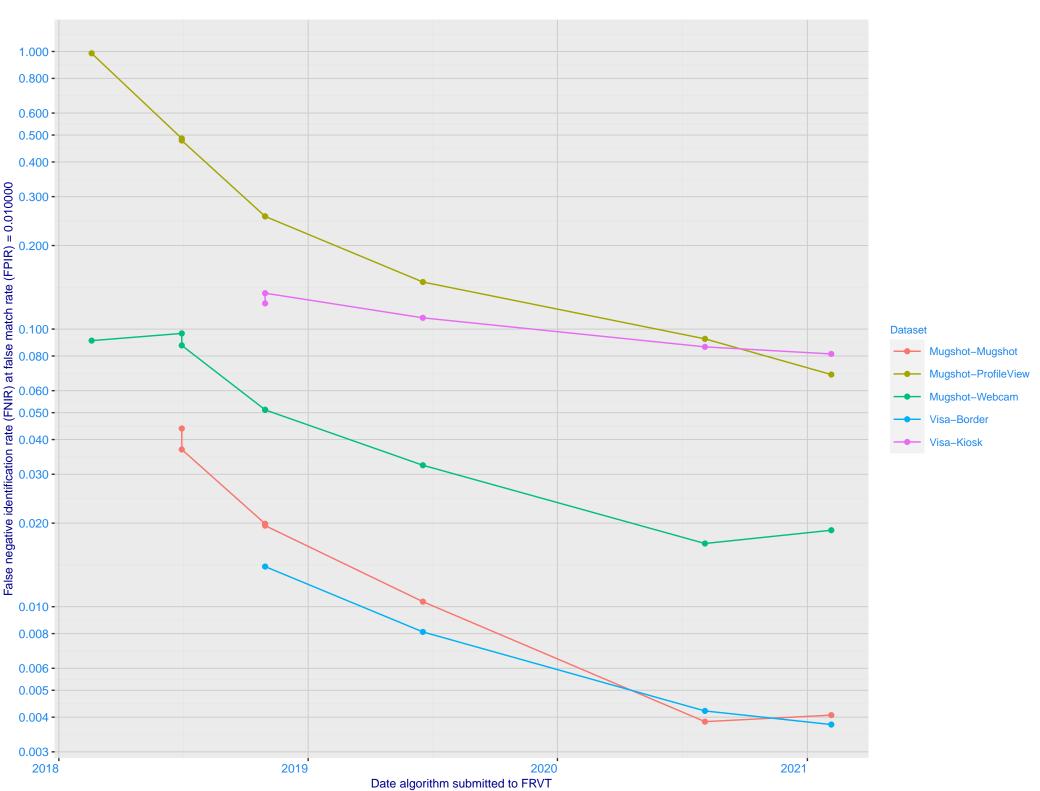
Identification:

Frontal mugshot ranking 83 (out of 265) -- FNIR(1600000, T, L+1) = 0.0500, FPIR=0.001000 vs. lowest 0.0018 from sensetime\_004

Mugshot webcam ranking 103 (out of 225) -- FNIR(1600000, T, L+1) = 0.1467, FPIR=0.001000 vs. lowest 0.0122 from sensetime\_003

Mugshot profile ranking 28 (out of 195) -- FNIR(1600000, T, L+1) = 0.8881, FPIR=0.001000 vs. lowest 0.1331 from hr\_000

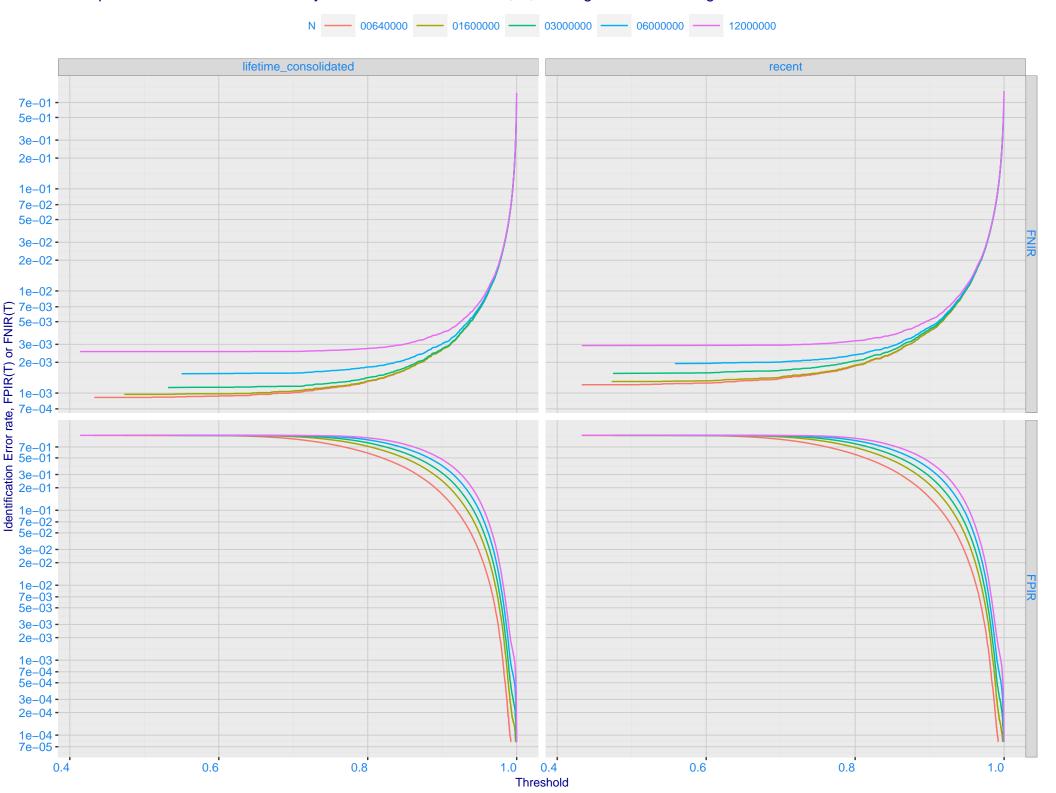




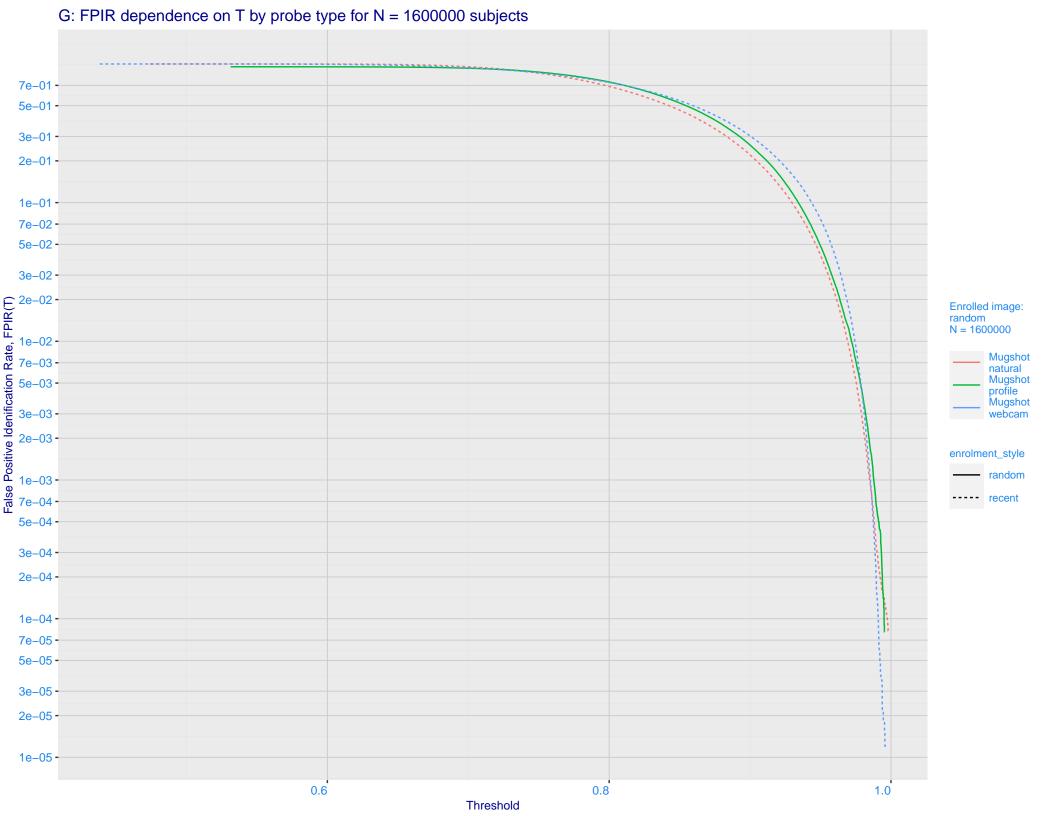
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.0001 - 0.700 - 0.500 - 0.200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

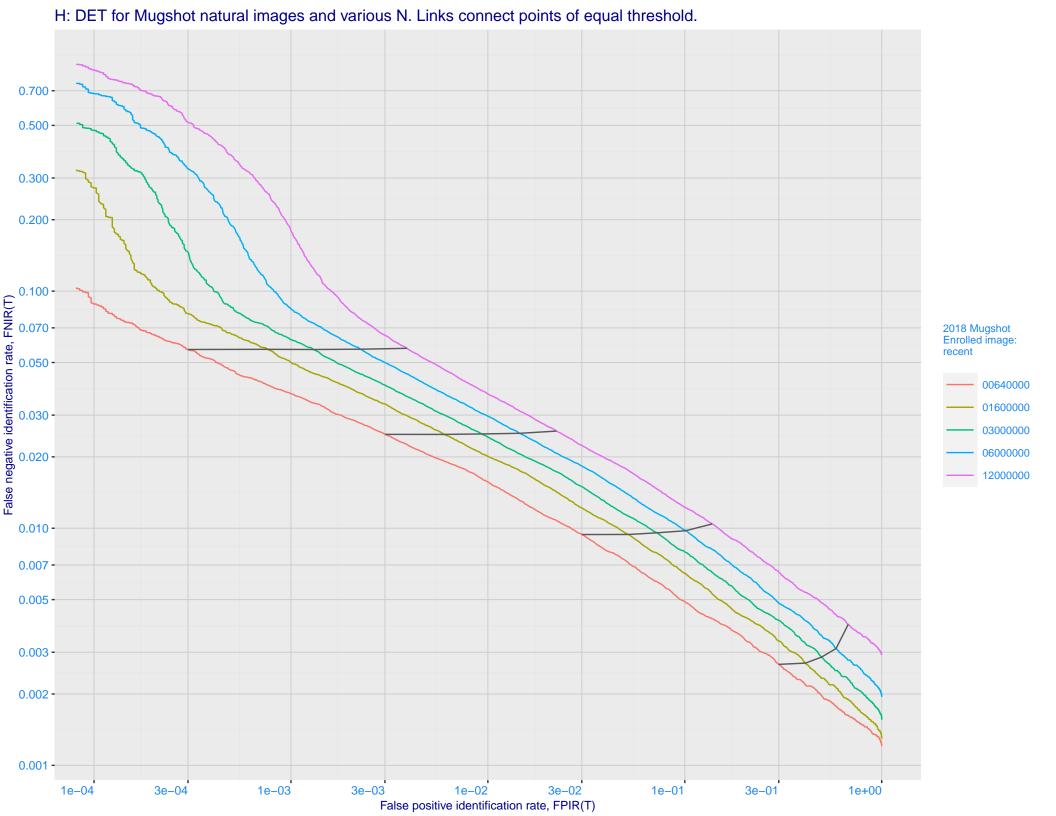
False positive identification rate, FPIR(T)

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

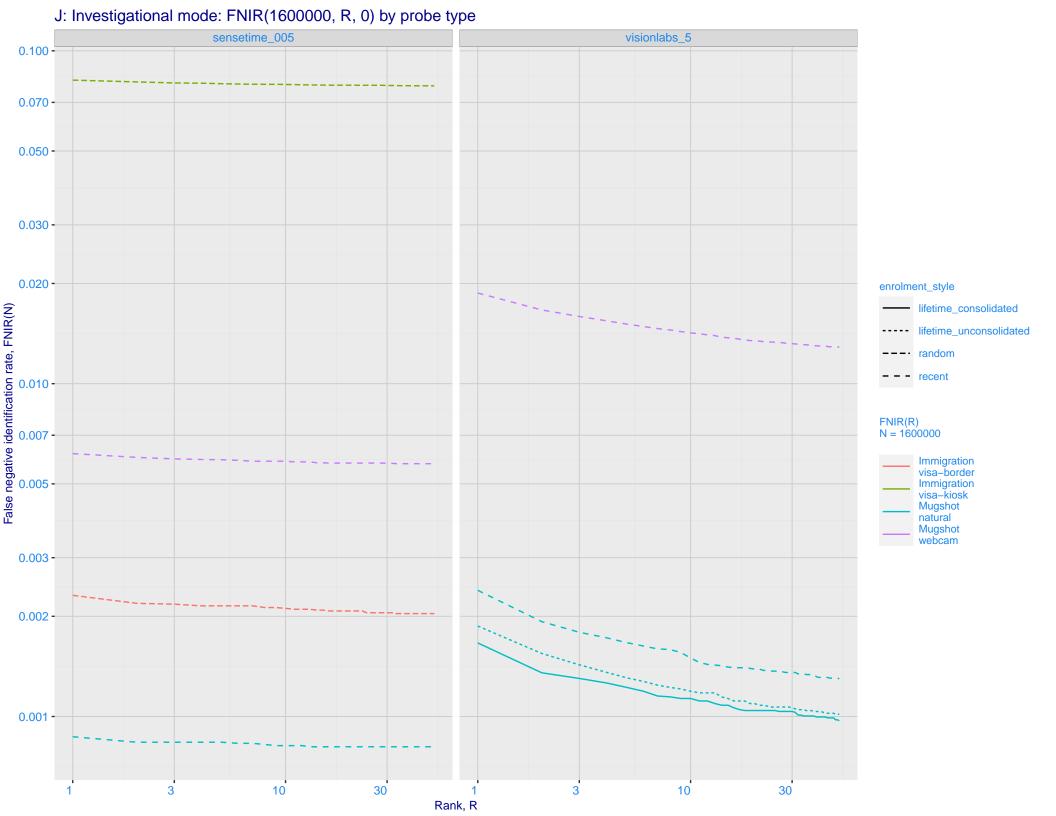


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -7e-02 -5e-02 -3e-02 -3e-02 -1e-02 -**Enrolled images:** recent N = 1600000 Mugshot natural Mugshot webcam 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)

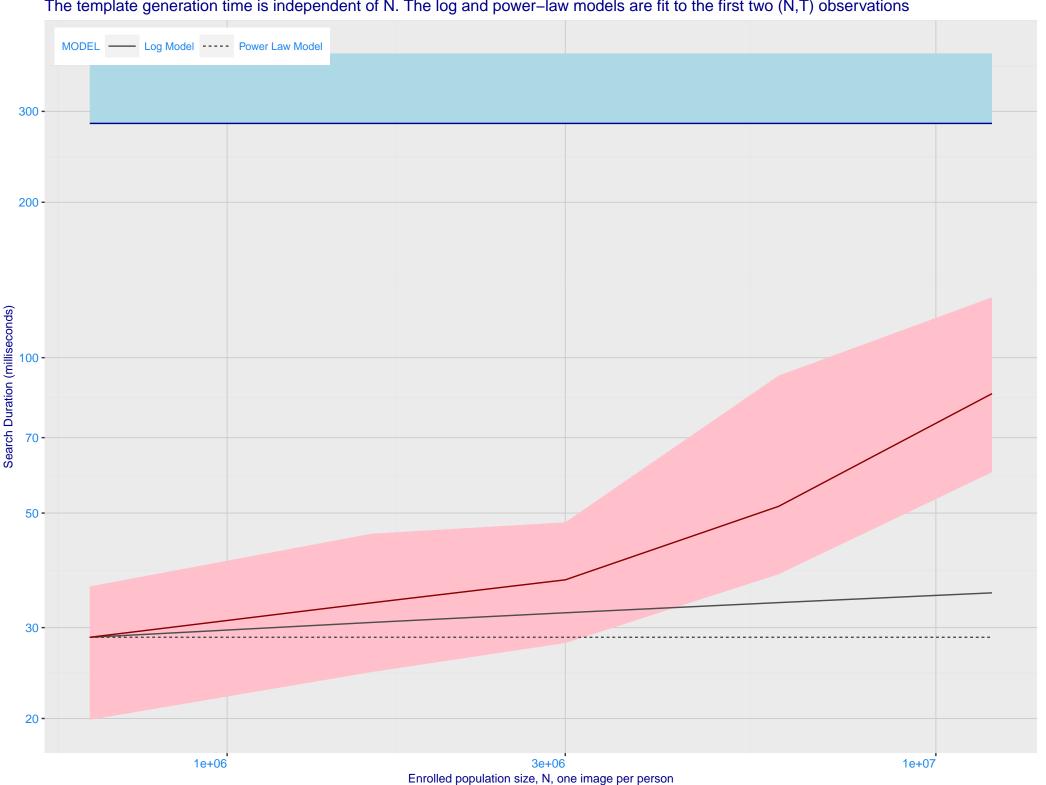




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime\_005) Immigration **Immigration** visa-border visa-kiosk 0.100 0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -Ealse negative identification rate, FNIR(N) 0.002 - 0.001 - 0.000 - 0.050 - 0.030 - 0. enrolment\_style consolidated ---- random --- recent - - - unconsolidated Mugshot webcam Mugshot natural FNIR@Rank = 1 sensetime\_005 visionlabs\_5 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



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



