A: Datasheet

Algorithm: megvii_0

Developer: Megvii/Face++

Submission Date: 2018_02_15

Template size: 2048 bytes

Template time (2.5 percentile): 784 msec

Template time (median): 785 msec

Template time (97.5 percentile): 816 msec

Investigation:

Frontal mugshot ranking 100 (out of 259) -- FNIR(1600000, 0, 1) = 0.0073 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 52 (out of 221) -- FNIR(1600000, 0, 1) = 0.0169 vs. lowest 0.0062 from sensetime_005

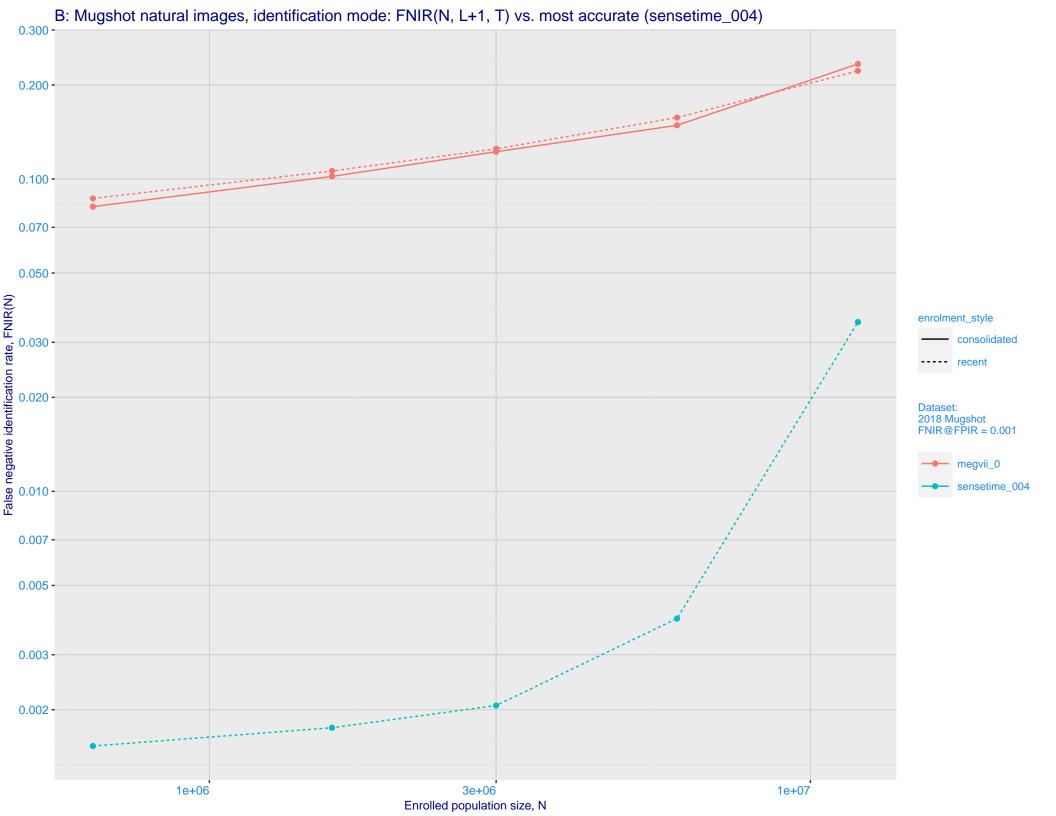
Immigration visa-border ranking 139 (out of 142) -- FNIR(1600000, 0, 1) = 1.0000 vs. lowest 0.0014 from visionlabs_009

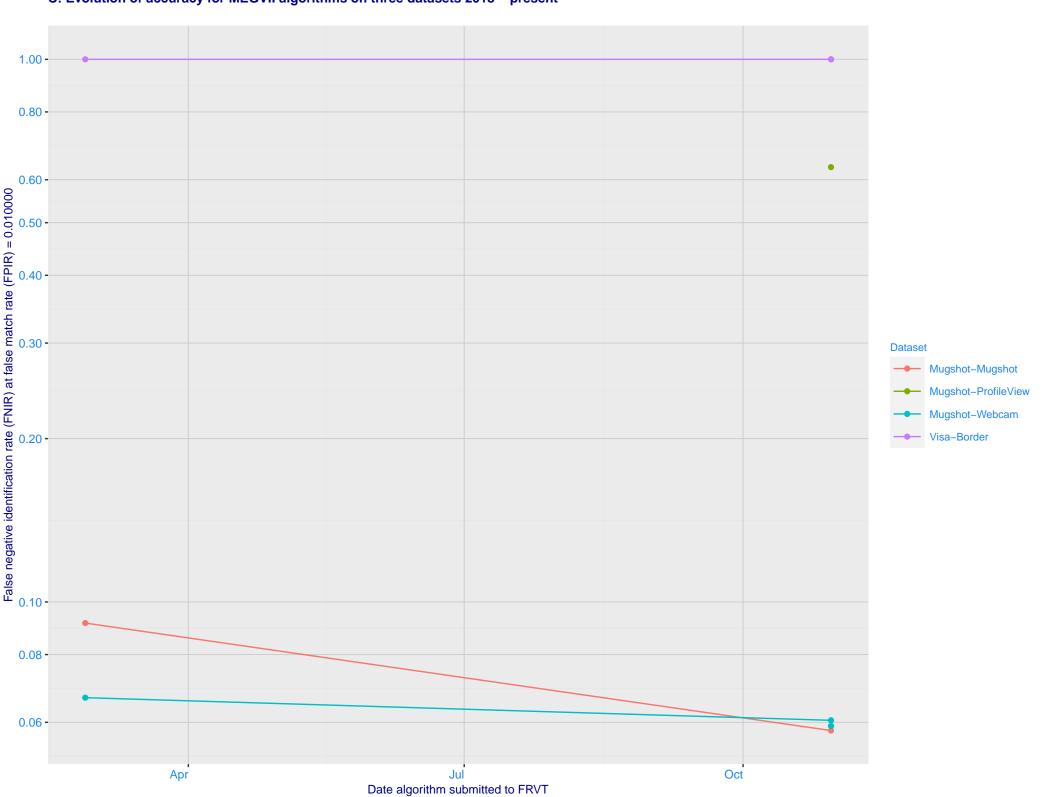
Identification:

Frontal mugshot ranking 133 (out of 259) -- FNIR(1600000, T, L+1) = 0.1061, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 73 (out of 219) -- FNIR(1600000, T, L+1) = 0.1157, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

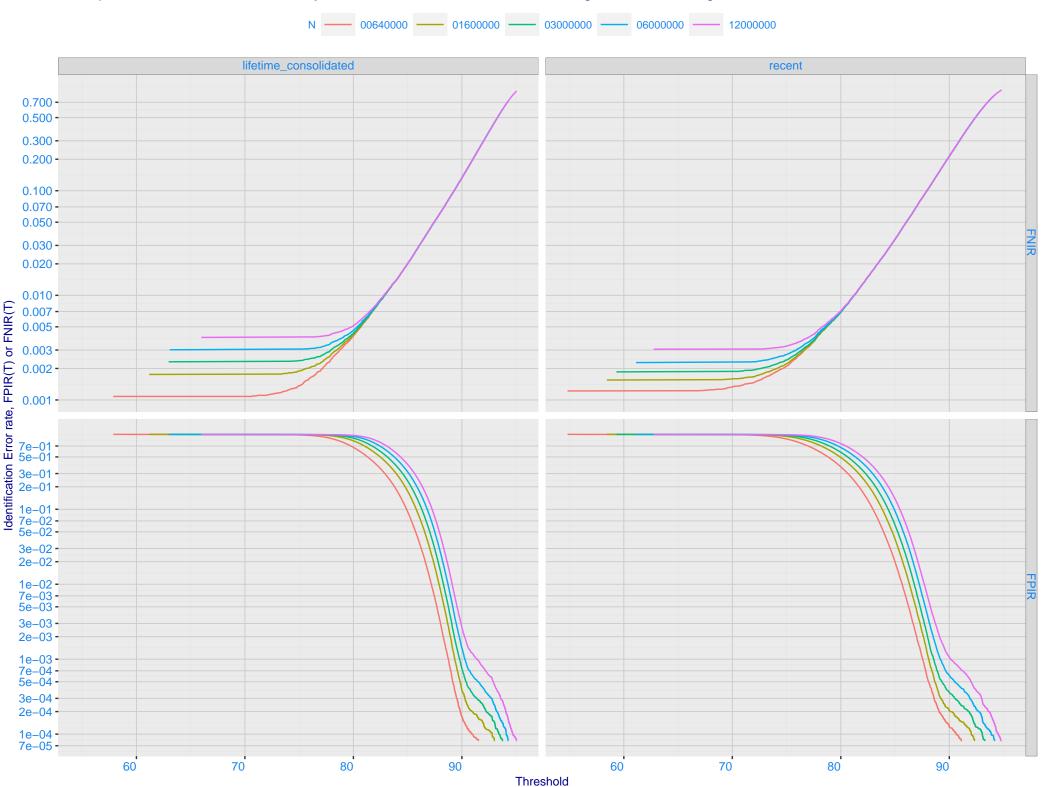
Immigration visa-border ranking 134 (out of 139) -- FNIR(1600000, T, L+1) = 1.0000, FPIR=0.001000 vs. lowest 0.0059 from sensetime_004



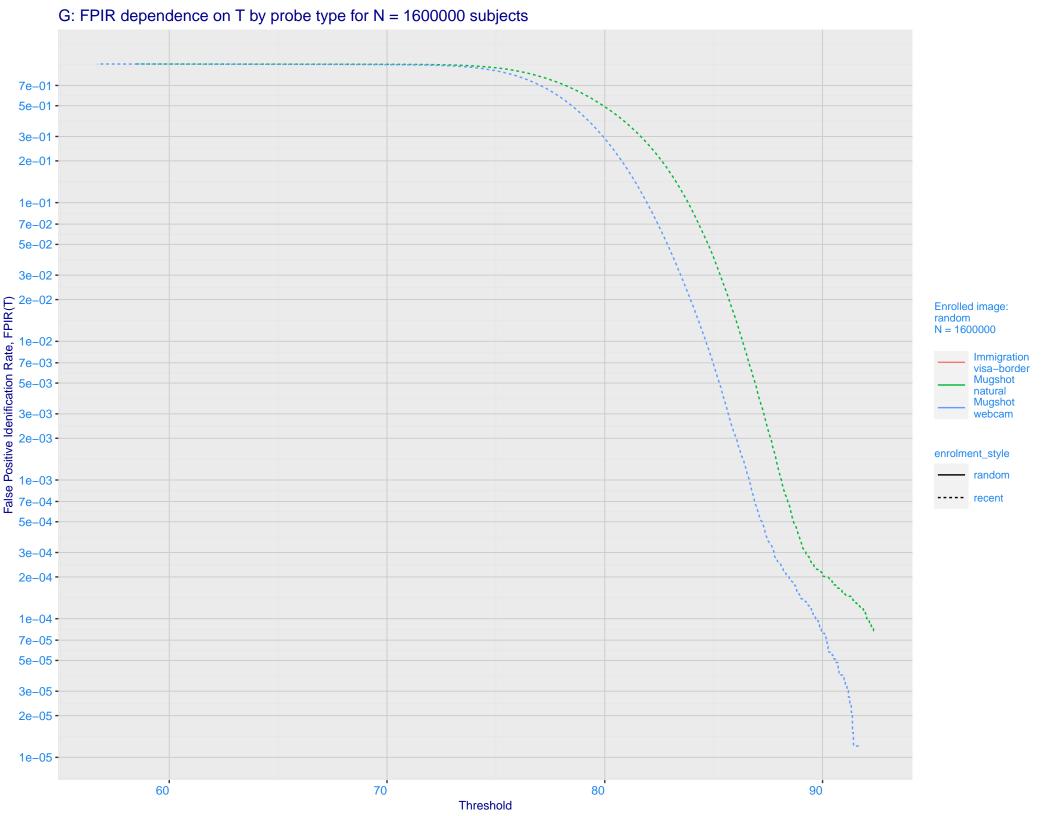


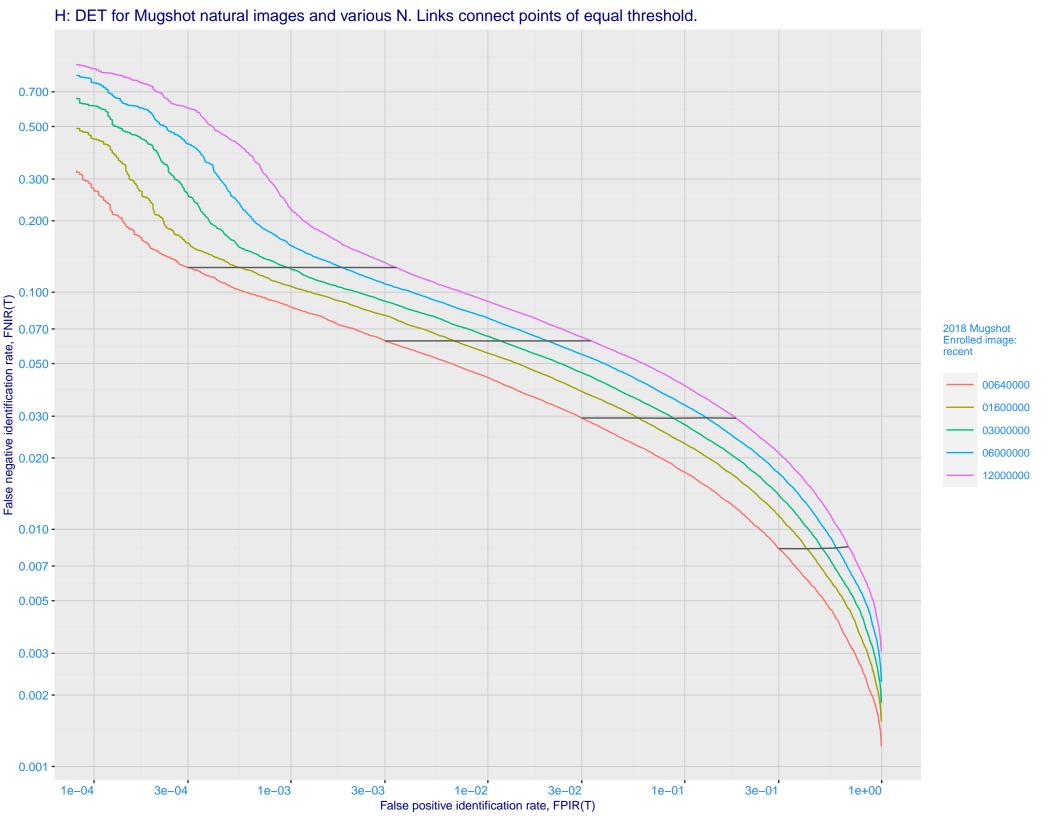
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals **Immigration** Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 - 0.005 - 0.005 - 0.002 - 0.001 - 0.001 - 0.700 - 0.500 - 0.200 enrolment_style 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 -

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 -3e-02 1e-05 3e-05 1e-04 3e-04 1e-03 3e-03 1e-02 1e-01 3e-01 False Positive Idenification Rate, FPIR(T)

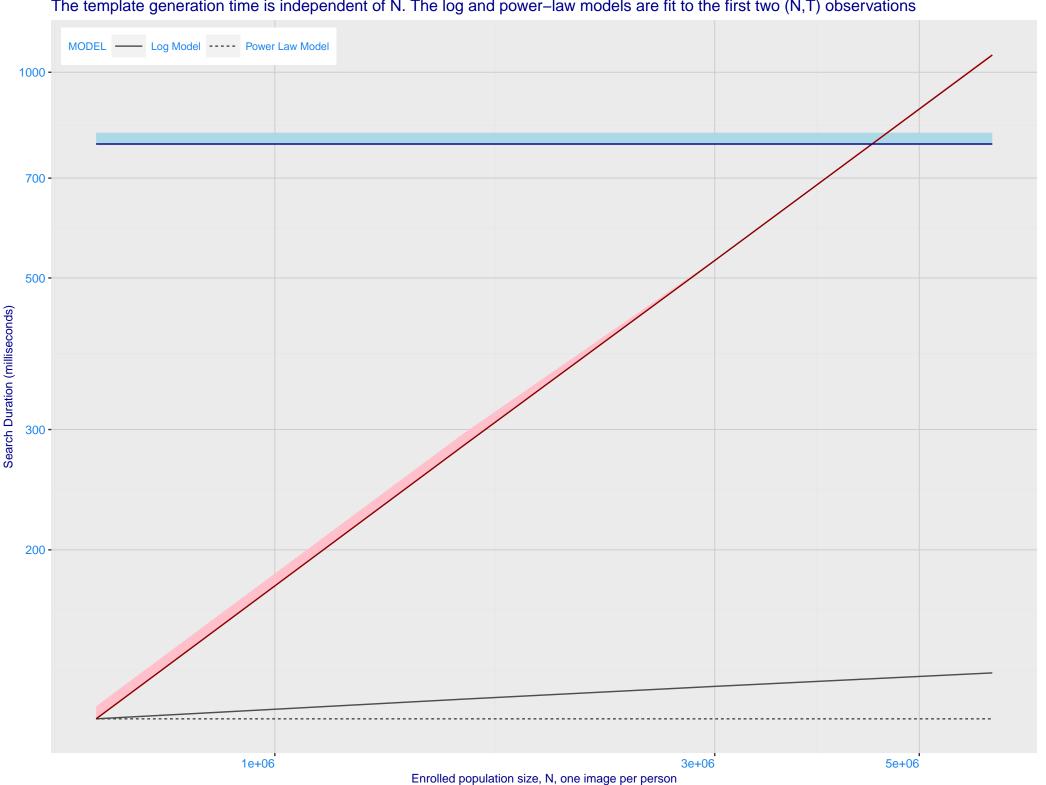




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 - 0.003 - 0.002 - 0.001 - 0.001 - 0.000 - 0.300 - 0.200 enrolment_style consolidated ---- random --- recent Mugshot webcam Mugshot natural FNIR@Rank = 1 megvii_0 sensetime_005 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 megvii_0 sensetime_005 0.700 -0.500 -0.300 -0.200 -0.100 - 0.070 - 0.050 - 0.030 - 0.020 - 0.010 enrolment_style lifetime_consolidated ---- random --- recent FNIR(R) N = 1600000 Immigration visa-border Immigration visa-kiosk Mugshot natural Mugshot webcam 0.007 -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



