A: Datasheet

Algorithm: microsoft_1

Developer: Microsoft

Submission Date: 2018_02_12

Template size: 1024 bytes

Template time (2.5 percentile): 341 msec

Template time (median): 348 msec

Template time (97.5 percentile): 362 msec

Investigation:

Frontal mugshot ranking 56 (out of 259) -- FNIR(1600000, 0, 1) = 0.0035 vs. lowest 0.0009 from sensetime_005

Immigration visa-border ranking 51 (out of 142) -- FNIR(1600000, 0, 1) = 0.0083 vs. lowest 0.0014 from visionlabs_009

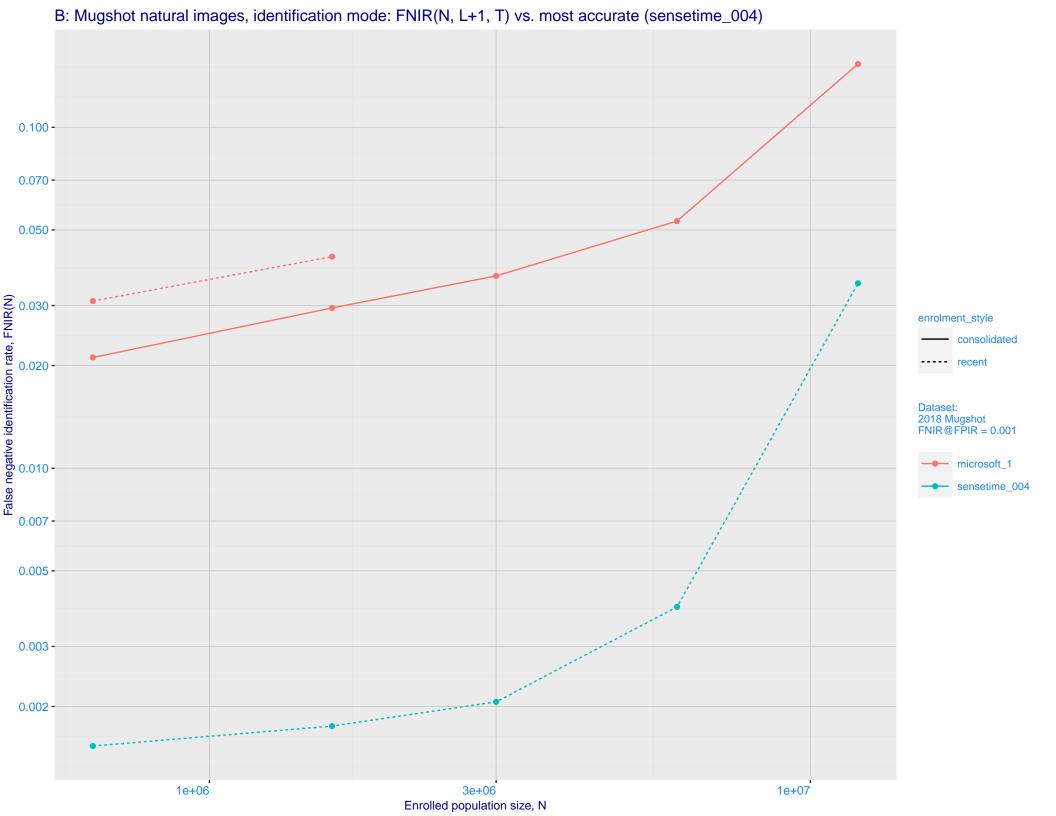
Immigration visa-kiosk ranking 51 (out of 139) — FNIR(1600000, 0, 1) = 0.1351 vs. lowest 0.0694 from cib_000

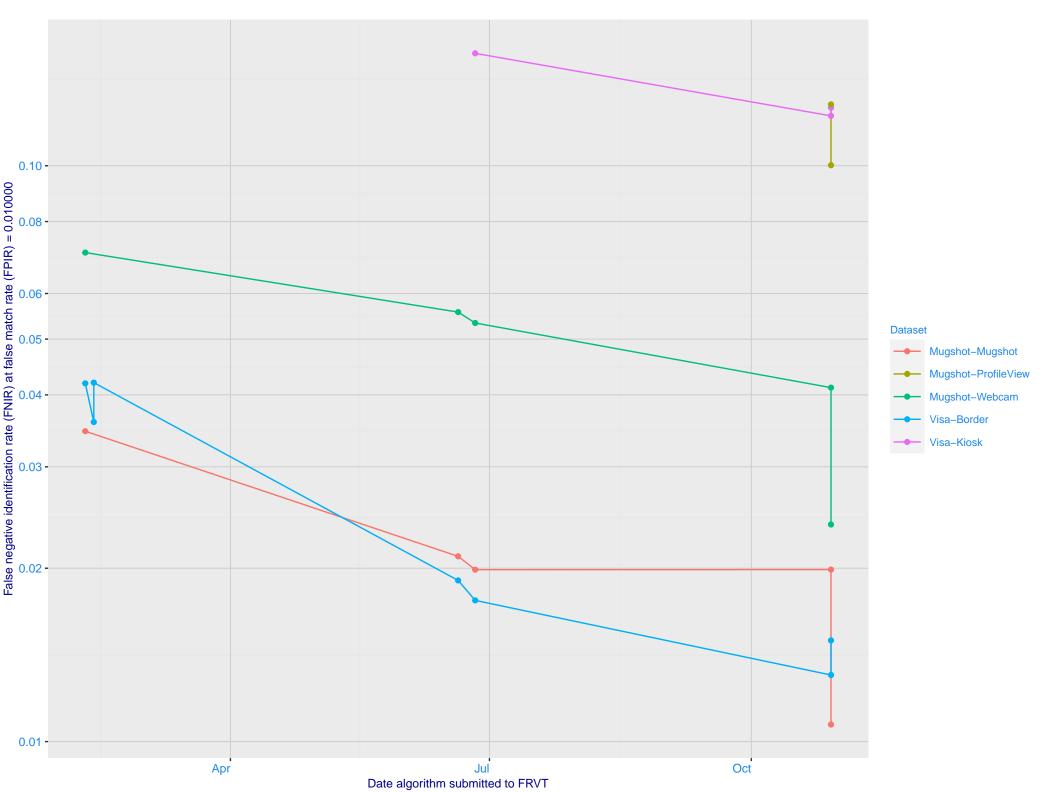
Identification:

Frontal mugshot ranking 59 (out of 259) -- FNIR(1600000, T, L+1) = 0.0417, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Immigration visa-border ranking 51 (out of 139) -- FNIR(1600000, T, L+1) = 0.0662, FPIR=0.001000 vs. lowest 0.0059 from sensetime_004

Immigration visa-kiosk ranking 30 (out of 134) -- FNIR(1600000, T, L+1) = 0.2766, FPIR=0.001000 vs. lowest 0.1048 from sensetime_005

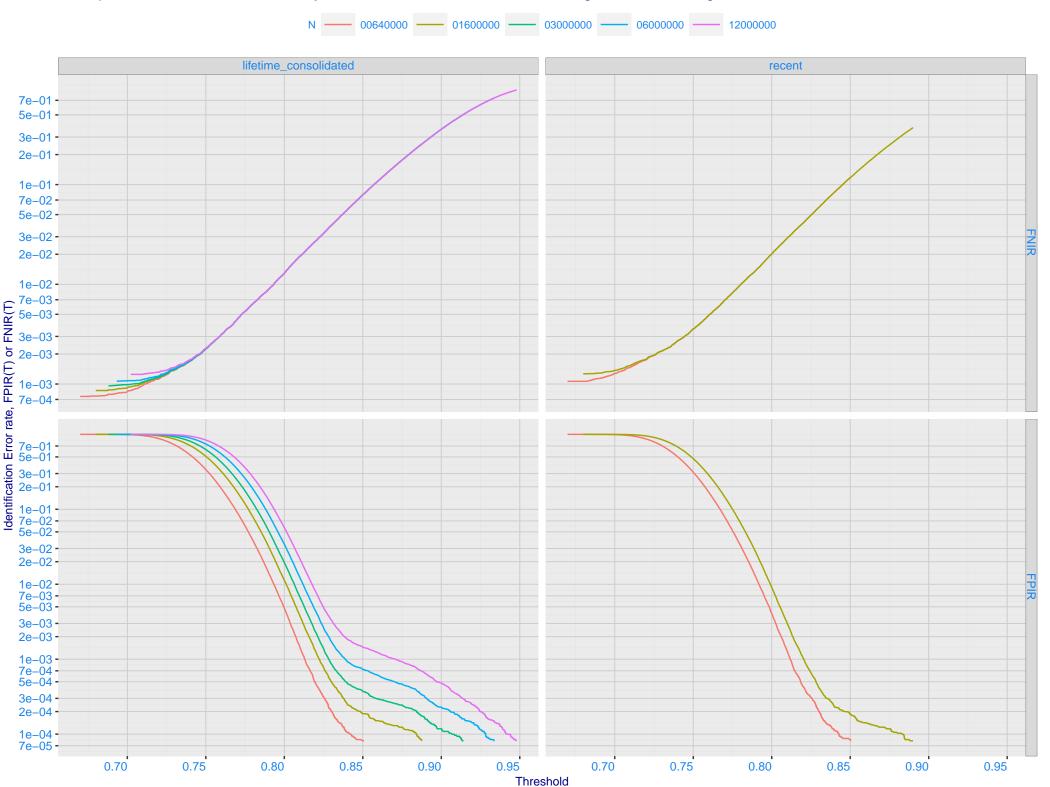




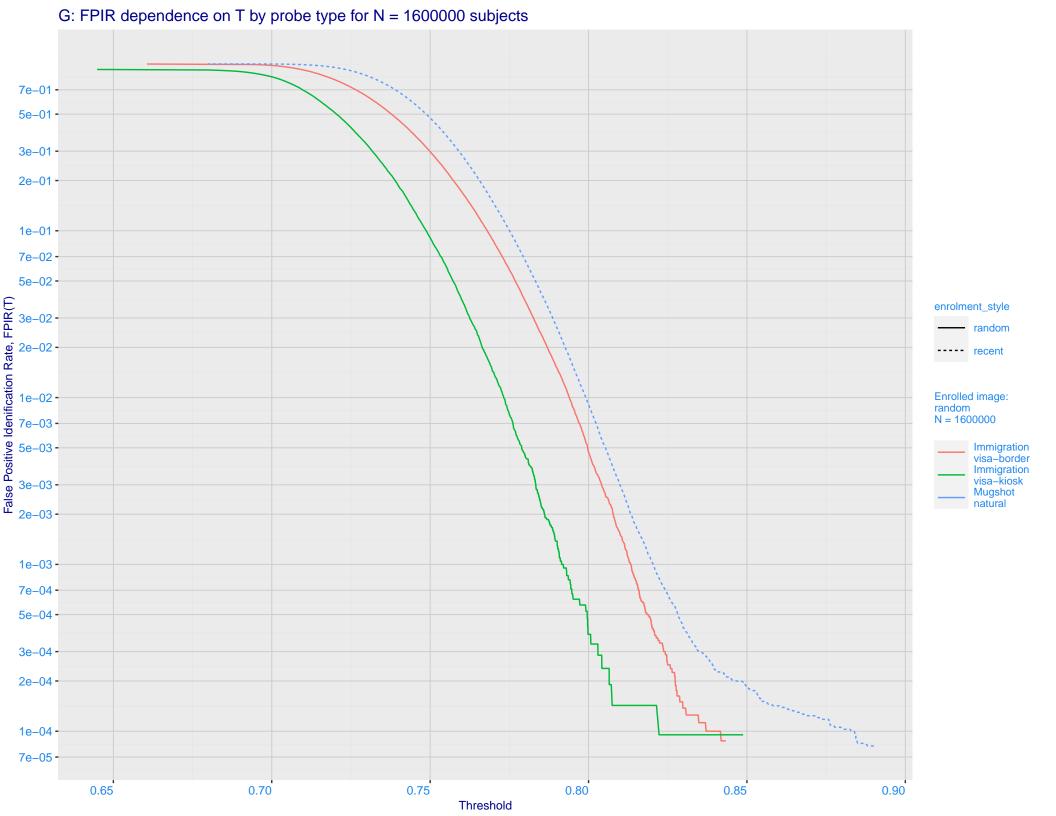
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.000 - 0.500 - 0.500 - 0.200 - 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 -

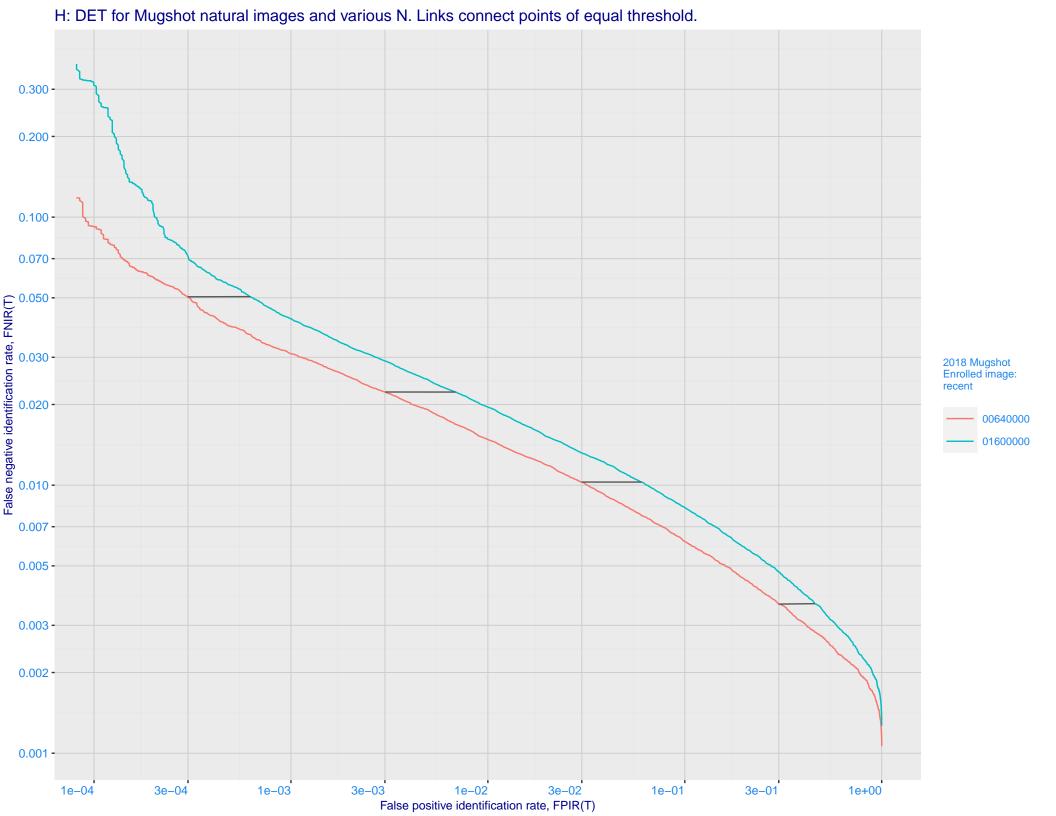
False positive identification rate, FPIR(T)

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 -(E) 2e-01 -2e-01 -1e-01 -7e-02 -5e-02 -Enrolled images: recent N = 1600000 Mugshot natural 3e-02 -2e-02 -1e-02 -7e-03 -5e-03 -3e-03 -2e-03 -1e-03 -7e-04 -5e-04 -3e-04 -2e-04 -1e-04 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 False Positive Idenification Rate, FPIR(T)

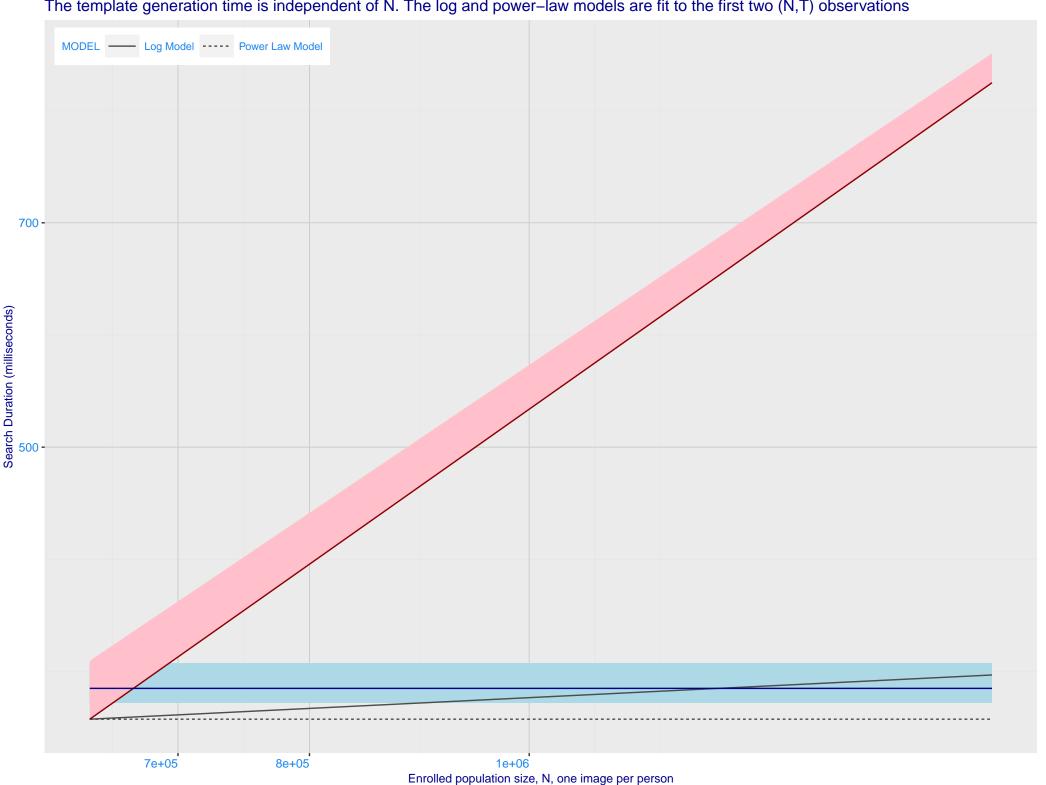




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 - 0.002 - 0.001 - 0.001 - 0.000 enrolment_style consolidated ---- random --- recent Mugshot webcam Mugshot natural FNIR@Rank = 1 microsoft_1 sensetime_005 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 microsoft_1 sensetime_005 0.100 -0.070 -0.050 -0.030 enrolment_style Ealse negative identification rate, FNIR(N) 0.000 - 0.000 - 0.0007 - 0.0005 lifetime_consolidated ---- random --- recent FNIR(R) N = 1600000 Immigration visa-border Immigration visa-kiosk Mugshot natural Mugshot webcam 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



