A: Datasheet

Algorithm: neurotechnology_4

Developer: Neurotechnology

Submission Date: 2018_06_27

Template size: 2048 bytes

Template time (2.5 percentile): 524 msec

Template time (median): 537 msec

Template time (97.5 percentile): 584 msec

Investigation:

Frontal mugshot ranking 82 (out of 259) -- FNIR(1600000, 0, 1) = 0.0056 vs. lowest 0.0009 from sensetime_005

Mugshot webcam ranking 66 (out of 221) -- FNIR(1600000, 0, 1) = 0.0200 vs. lowest 0.0062 from sensetime_005

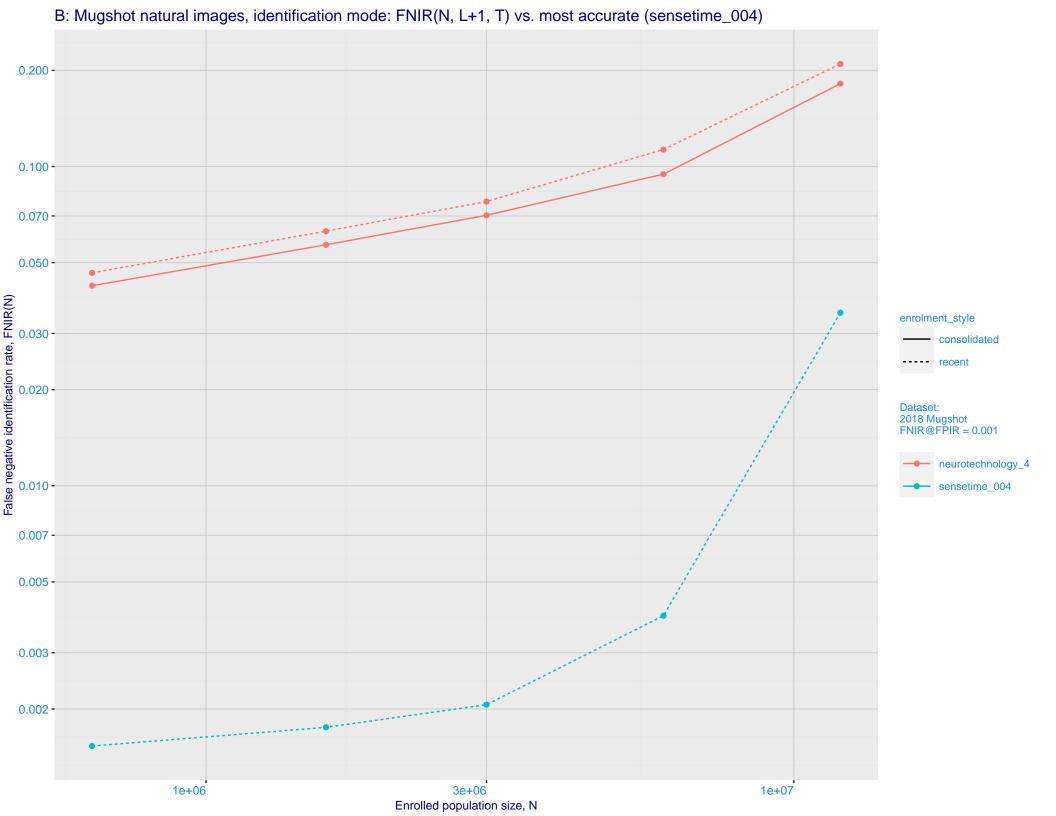
Mugshot profile ranking 163 (out of 190) -- FNIR(1600000, 0, 1) = 0.9701 vs. lowest 0.0591 from sensetime_005

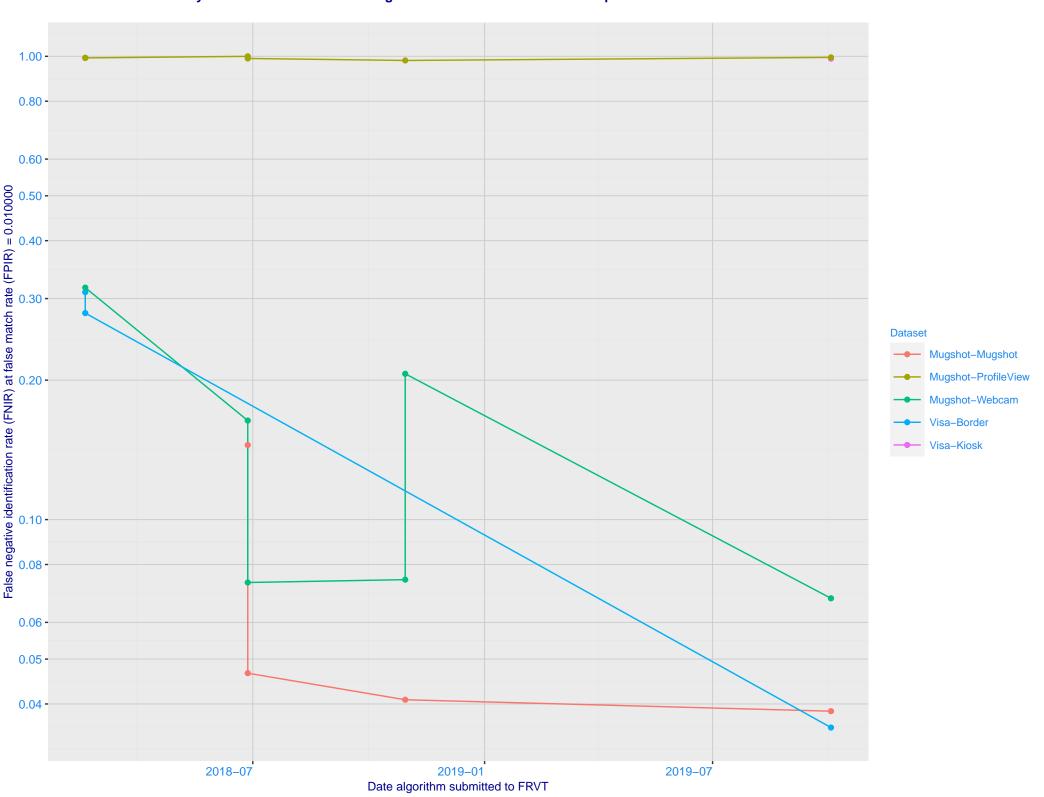
Identification:

Frontal mugshot ranking 99 (out of 259) -- FNIR(1600000, T, L+1) = 0.0627, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot webcam ranking 75 (out of 219) -- FNIR(1600000, T, L+1) = 0.1170, FPIR=0.001000 vs. lowest 0.0122 from sensetime_003

Mugshot profile ranking 88 (out of 189) -- FNIR(1600000, T, L+1) = 0.9940, FPIR=0.001000 vs. lowest 0.1733 from sensetime_005

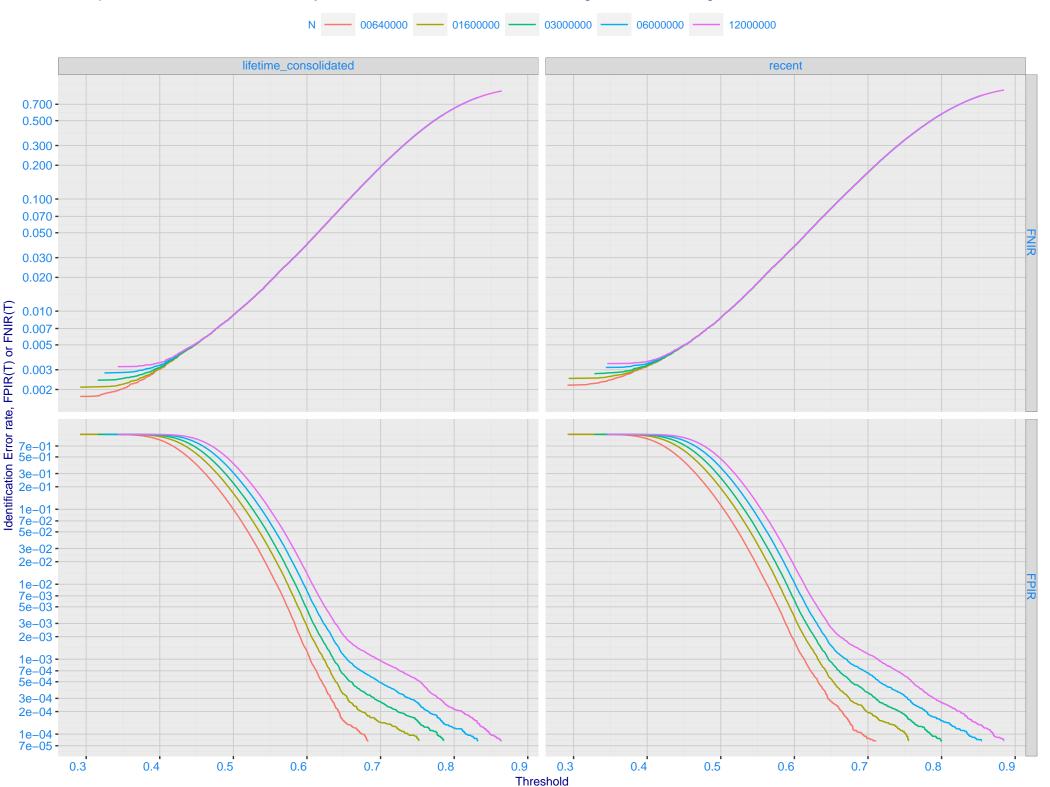




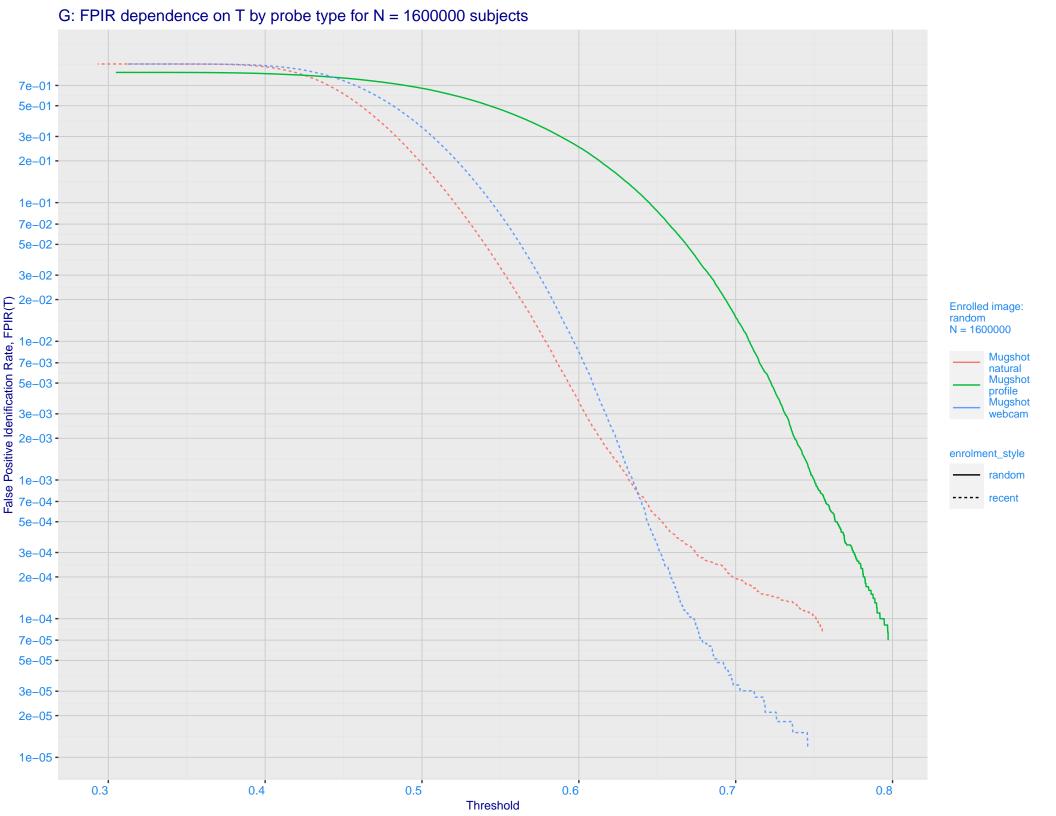
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.0001 - 0.700 - 0.500 - 0.200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

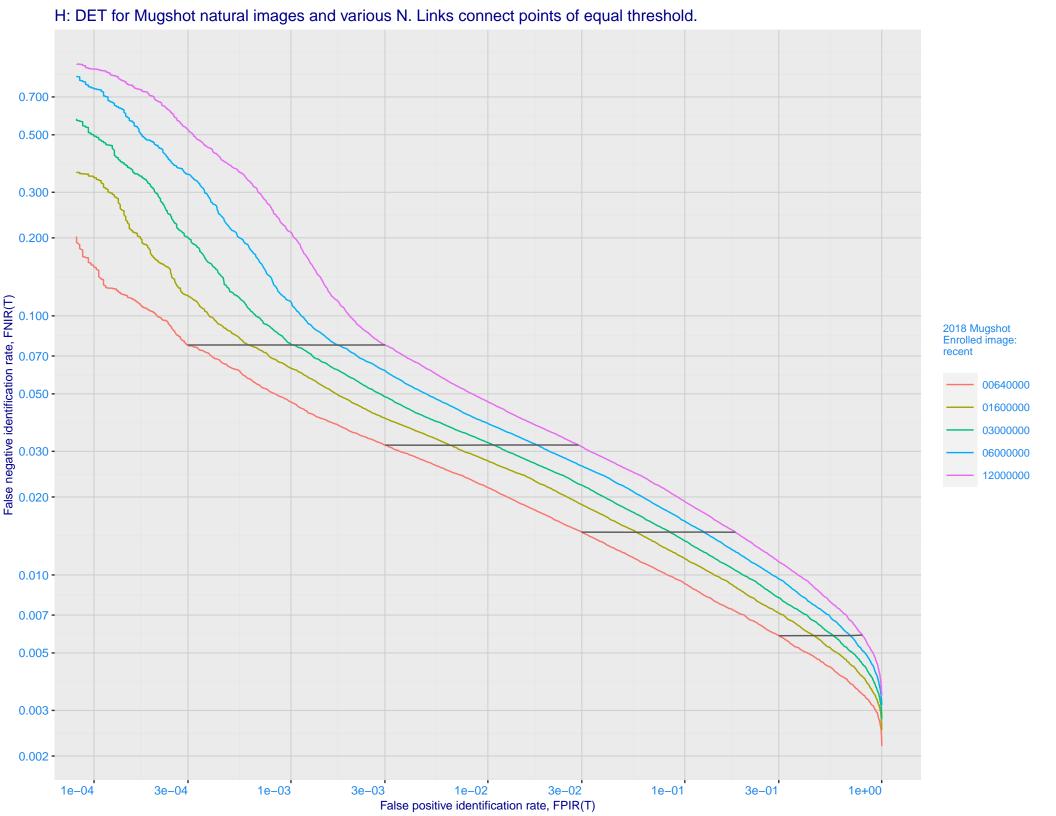
False positive identification rate, FPIR(T)

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

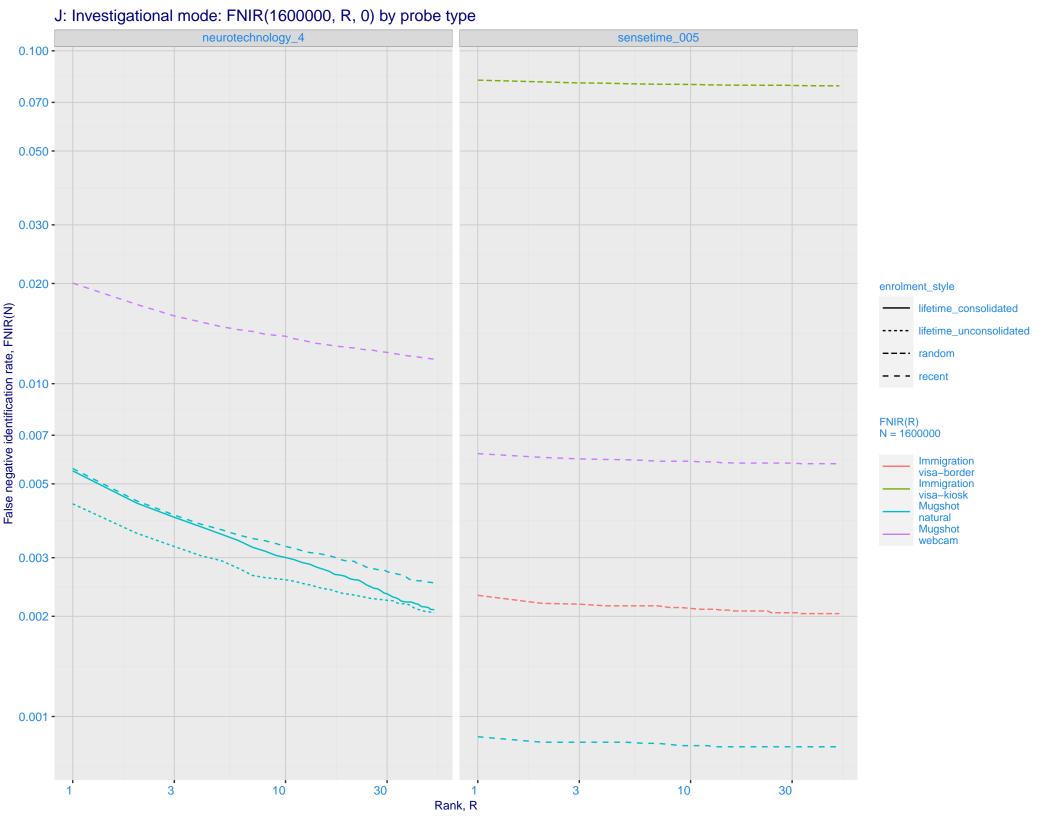


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 -5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -7e-02 -5e-02 -3e-02 -3e-02 -1e-02 -**Enrolled images:** recent N = 1600000 Mugshot natural Mugshot webcam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

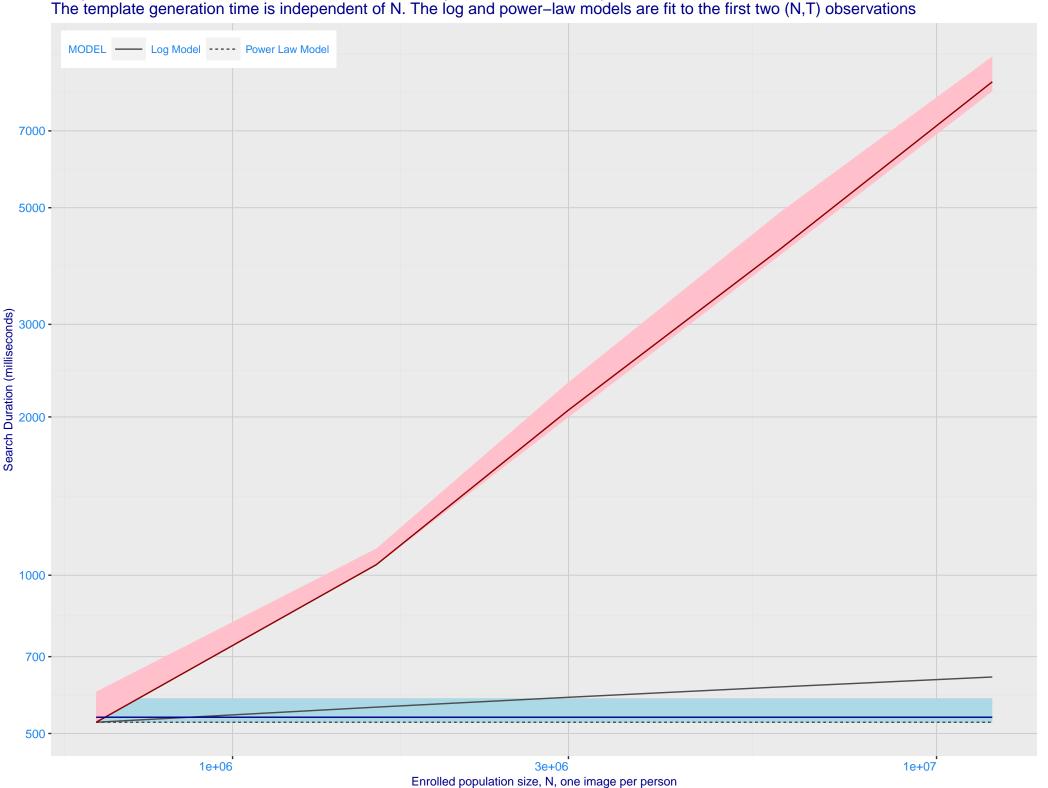




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) **Immigration Immigration** visa-border visa-kiosk 0.100 0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -0.003 -Palse negative identification rate, FNIR(N) 0.002 - 0.001 - 0.000 - 0.050 - 0.050 - 0.030 - 0. FNIR@Rank = 1 neurotechnology_4 sensetime_005 Mugshot webcam Mugshot enrolment_style natural consolidated ---- random --- recent - - - unconsolidated 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



