A: Datasheet

Algorithm: neurotechnology_1

Developer: Neurotechnology

Submission Date: 2018_02_16

Template size: 5214 bytes

Template time (2.5 percentile): 650 msec

Template time (median): 656 msec

Template time (97.5 percentile): 776 msec

Investigation:

Frontal mugshot ranking 199 (out of 265) -- FNIR(1600000, 0, 1) = 0.0441 vs. lowest 0.0009 from sensetime_005

Mugshot profile ranking 162 (out of 196) -- FNIR(1600000, 0, 1) = 0.9660 vs. lowest 0.0591 from sensetime_005

Immigration visa-border ranking 96 (out of 148) -- FNIR(1600000, 0, 1) = 0.0581 vs. lowest 0.0013 from visionlabs_010

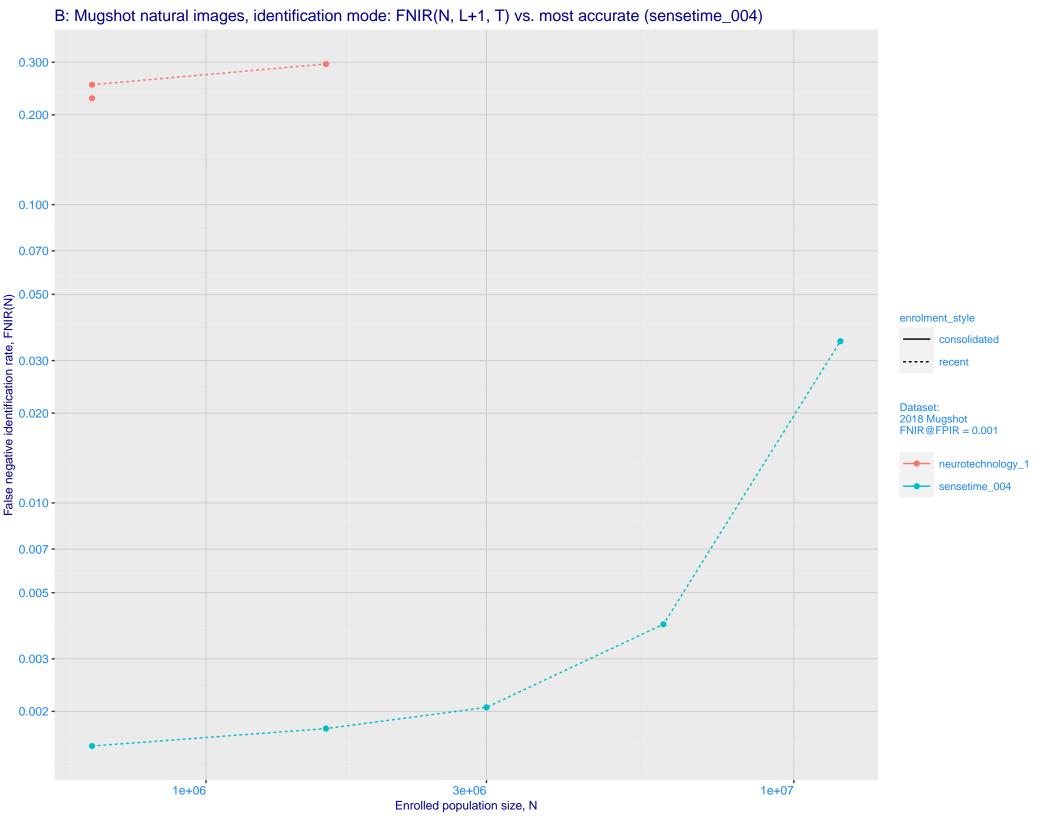
Immigration visa-kiosk ranking 93 (out of 145) -- FNIR(1600000, 0, 1) = 0.2787 vs. lowest 0.0568 from hr_000

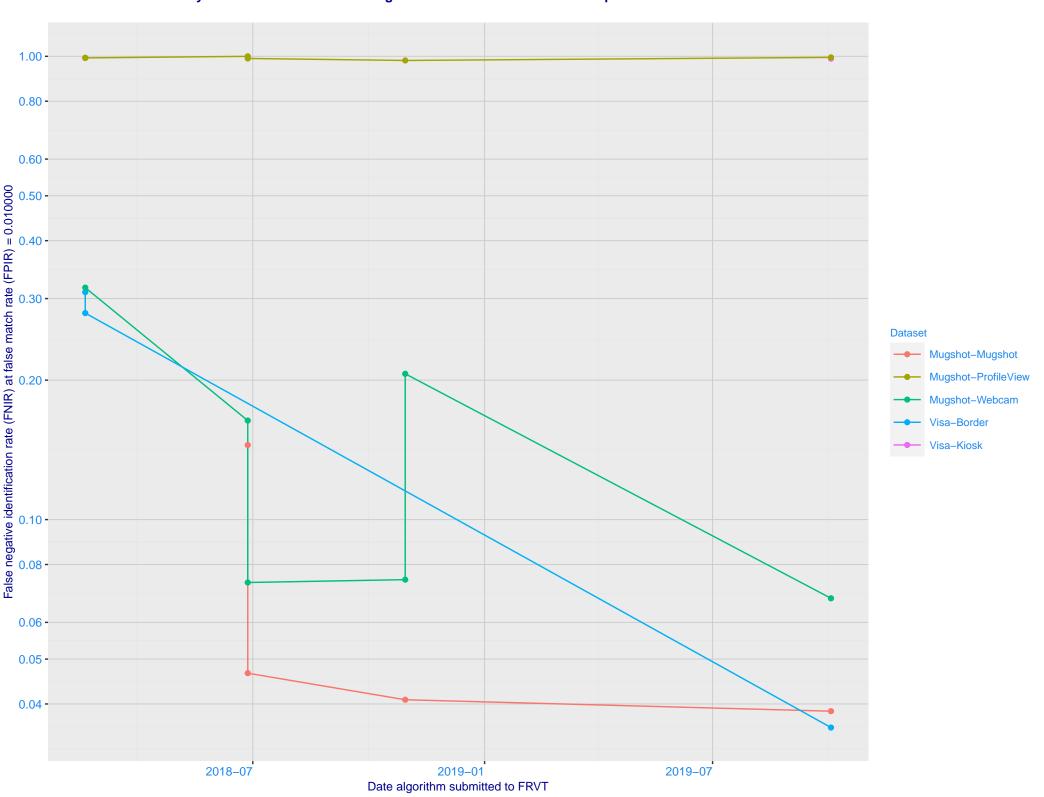
Identification:

Frontal mugshot ranking 194 (out of 265) -- FNIR(1600000, T, L+1) = 0.2961, FPIR=0.001000 vs. lowest 0.0018 from sensetime_004

Mugshot profile ranking 114 (out of 195) -- FNIR(1600000, T, L+1) = 0.9977, FPIR=0.001000 vs. lowest 0.1331 from hr_000

Immigration visa-border ranking 99 (out of 146) -- FNIR(1600000, T, L+1) = 0.4249, FPIR=0.001000 vs. lowest 0.0049 from hr_000

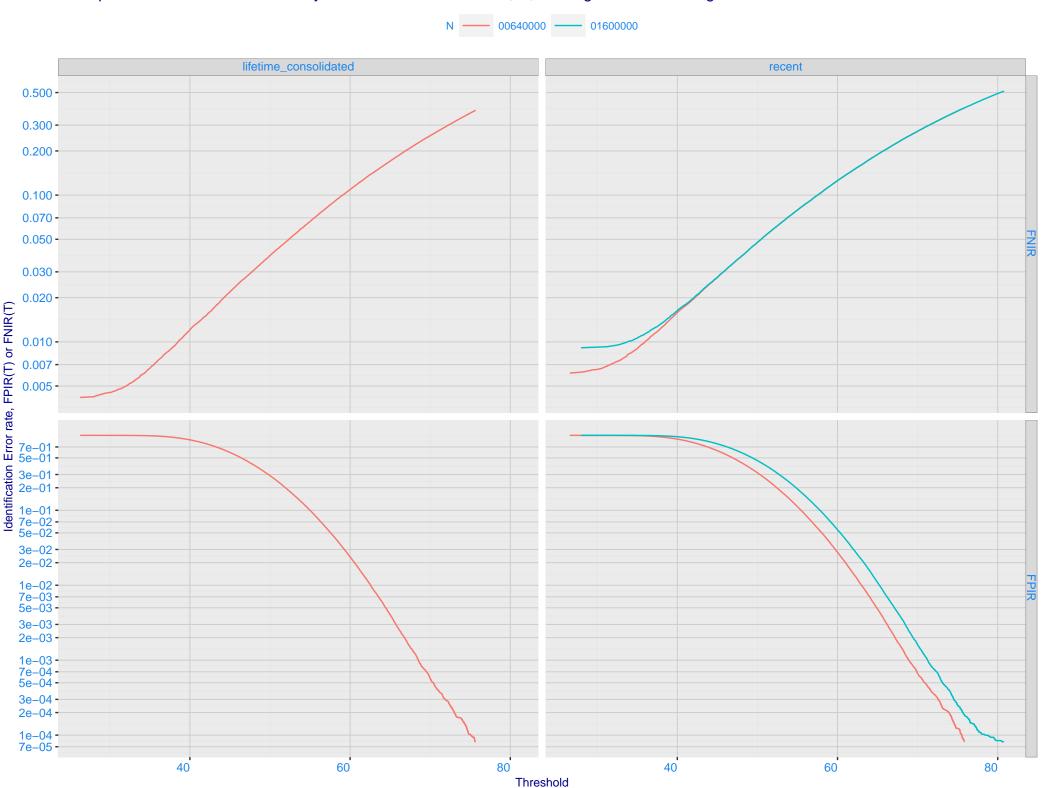




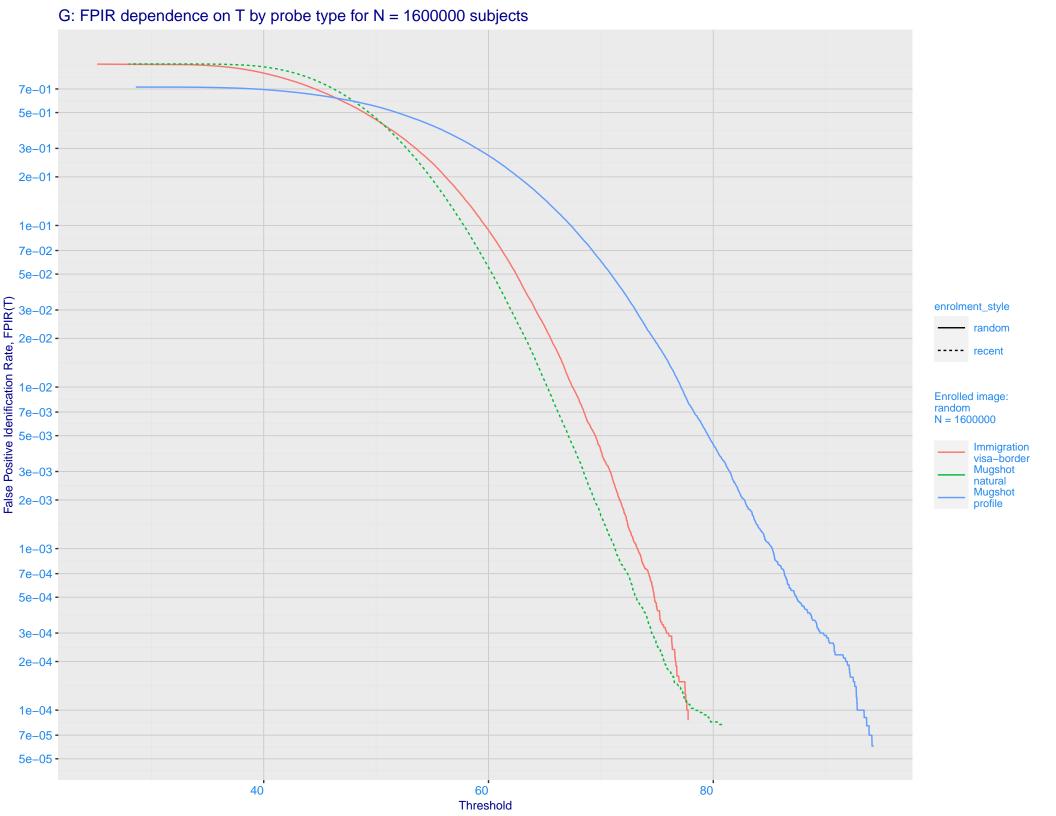
D: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -0.100 -0.070 neurotechnology 0.050 -0.030 -0.020 -0.010 -0.007 -Ealse negative identification rate, FNIR(T) 0.003 - 0.0001 - 0.700 -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

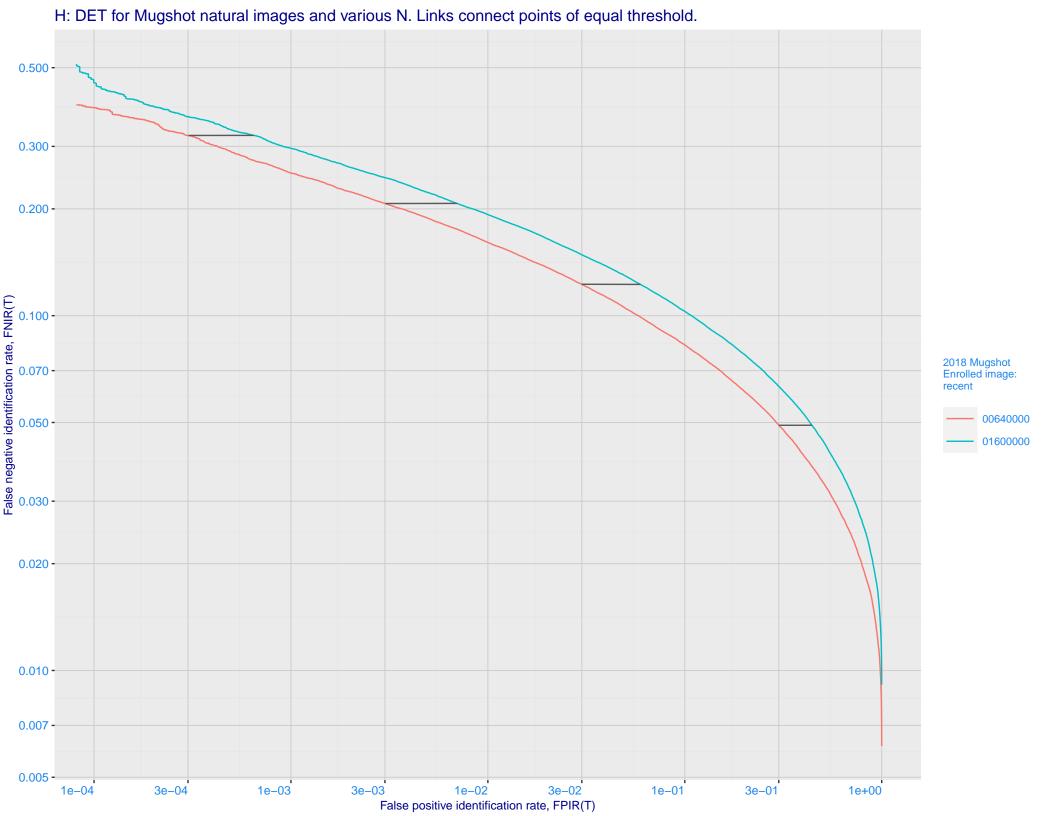
False positive identification rate, FPIR(T)

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

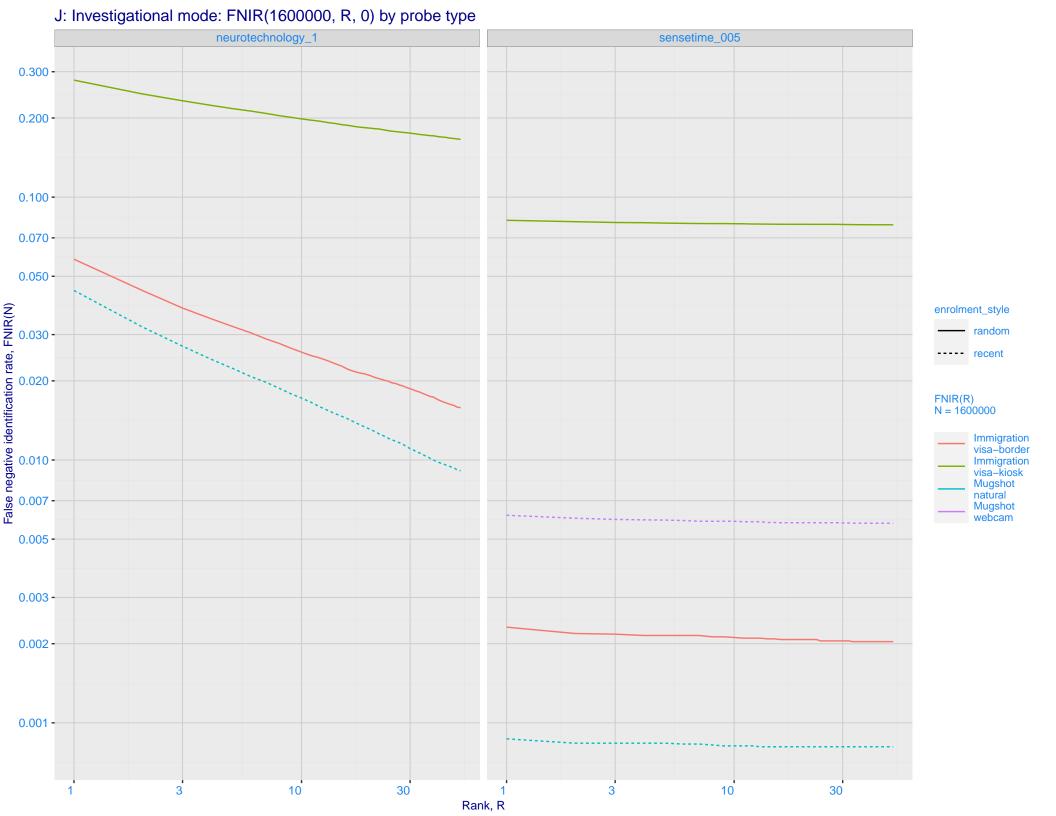


F: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 · 5e+01 -3e+01 -2e+01 -1e+01 -7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -E 1e-01 -Enrolled images: recent N = 1600000 Selectivity, 26–05 - 26–05 - 3 Mugshot natural 2e-02 -1e-02 -7e-03 -5e-03 -3e-03 -2e-03 -1e-03 -7e-04 -5e-04 -3e-04 -2e-04 -1e-04 -7e-05 -5e-05 -1e-04 3e-04 1e-03 3e-03 1e-02 3e-02 1e-01 3e-01 False Positive Idenification Rate, FPIR(T)

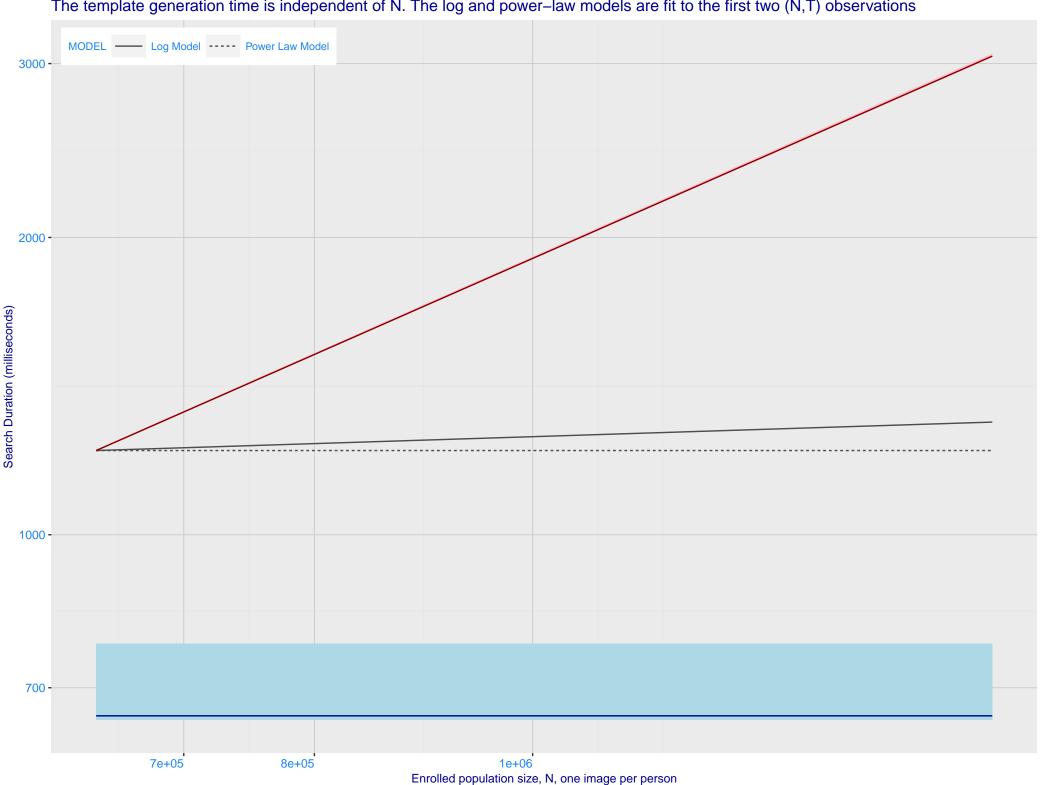




I: Investigational mode: FNIR(N, 1, 0) vs. most accurate (sensetime_005) Immigration **Immigration** visa-border visa-kiosk 0.300 -0.200 -0.100 -0.070 -0.050 -0.030 -0.020 -0.010 -0.007 -0.005 -Ealse negative identification rate, FNIR(N) 0.003 - 0.001 - 0.300 - 0.100 - 0.070 - 0. enrolment_style consolidated ---- random --- recent Mugshot natural Mugshot webcam FNIR@Rank = 1 -- neurotechnology_1 sensetime_005 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



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



