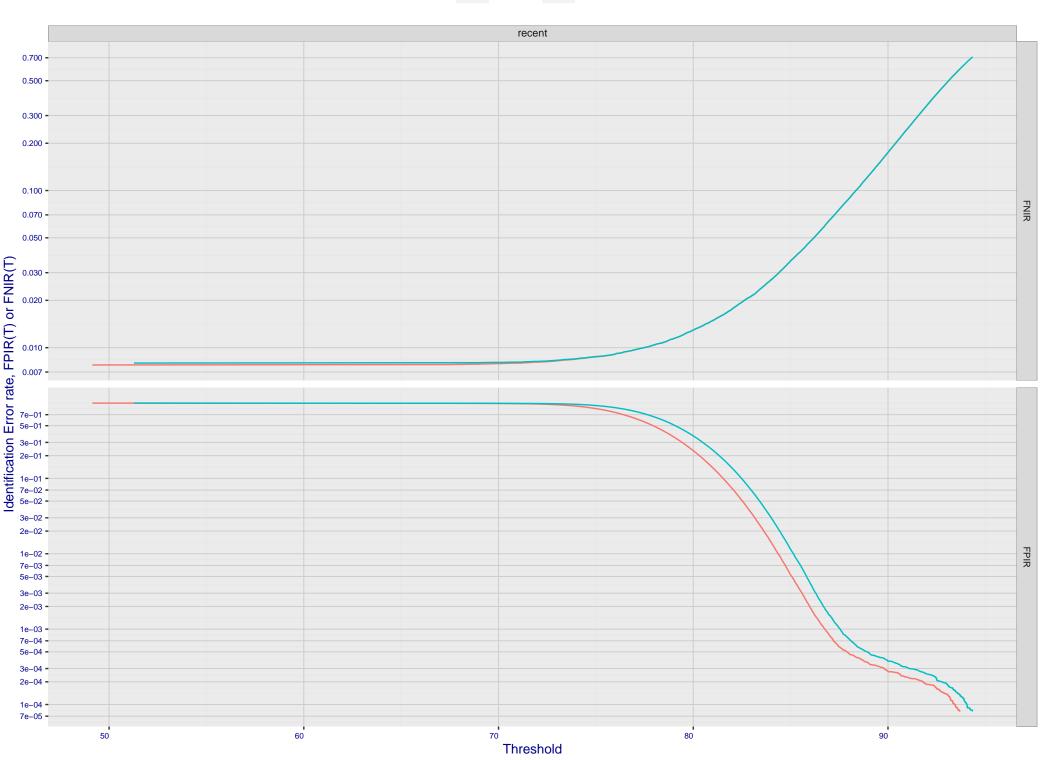
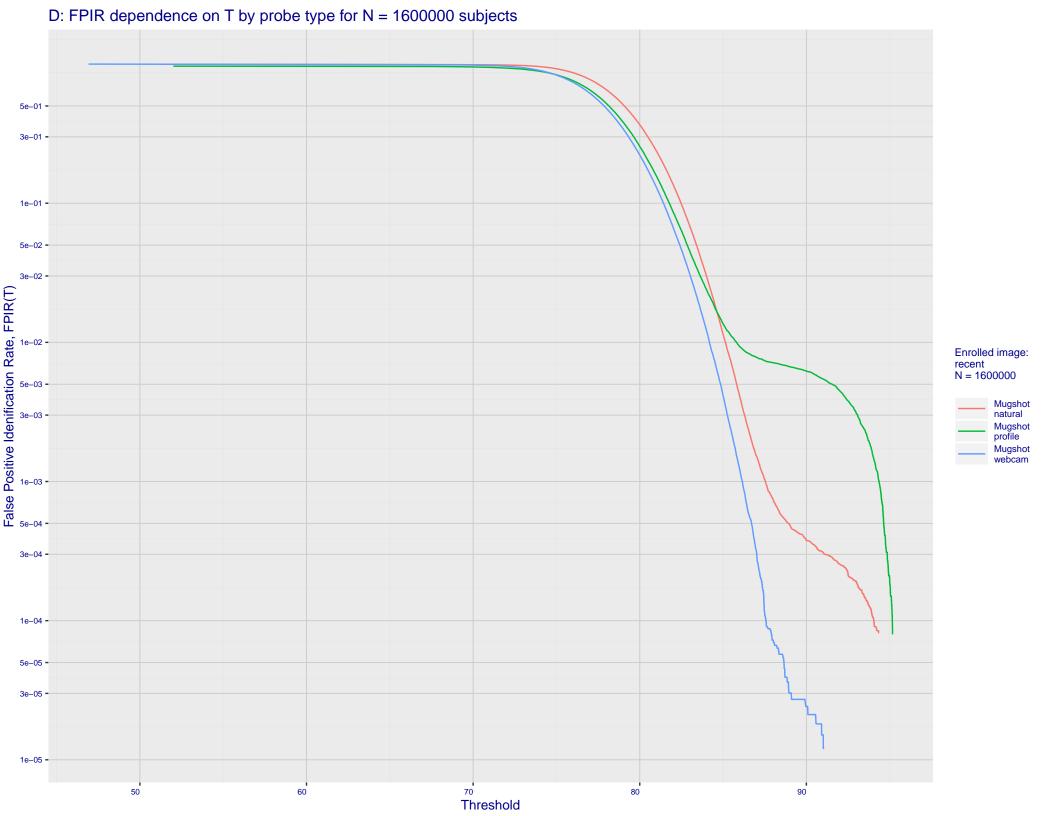
A: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Mugshot visa-border natural 0.700 -0.500 -0.300 -False negative identification rate, FNIR(T) enrolment_style random-ONE-MATE recent-ONE-MATE unconsolidated-ALL-MATES unconsolidated-ANY-MATE 0.020 -0.010 -0.007 1e+00 1e-04 1e-03 3e-03 1e+00 1e-04 1e-03 3e-03 1e-02 3e-02 1e-02 1e-01 3e-01 False positive identification rate, FPIR(T)

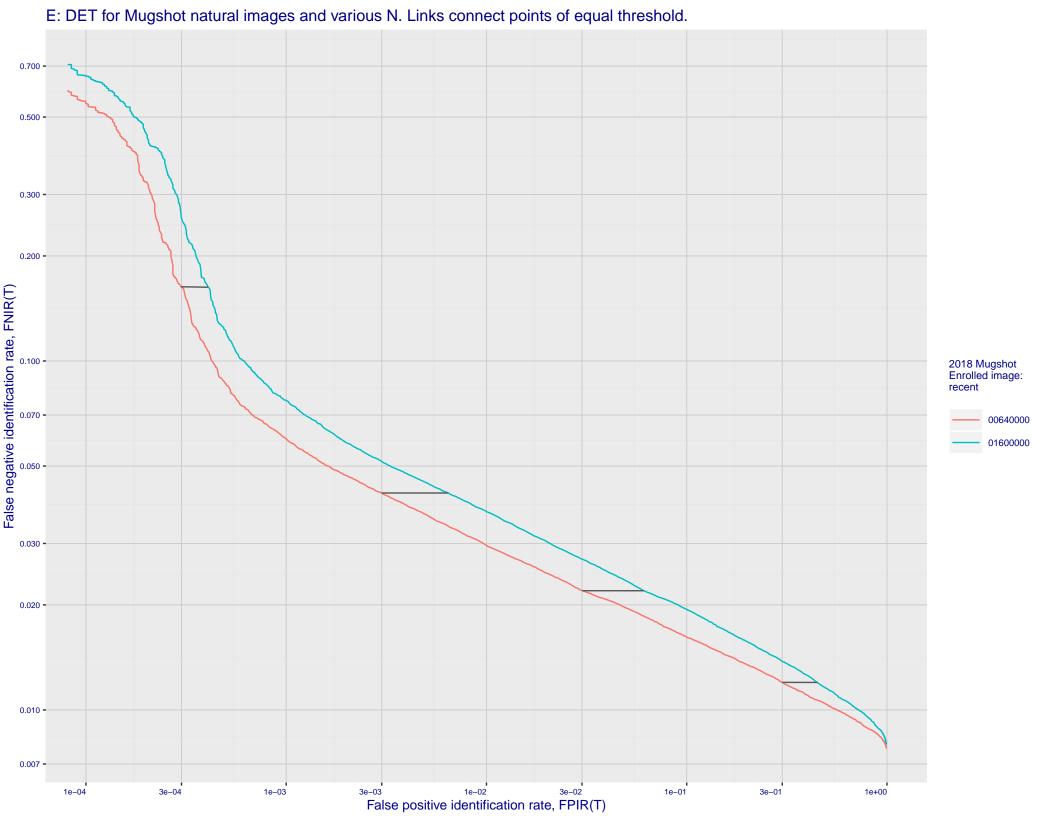
B: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images

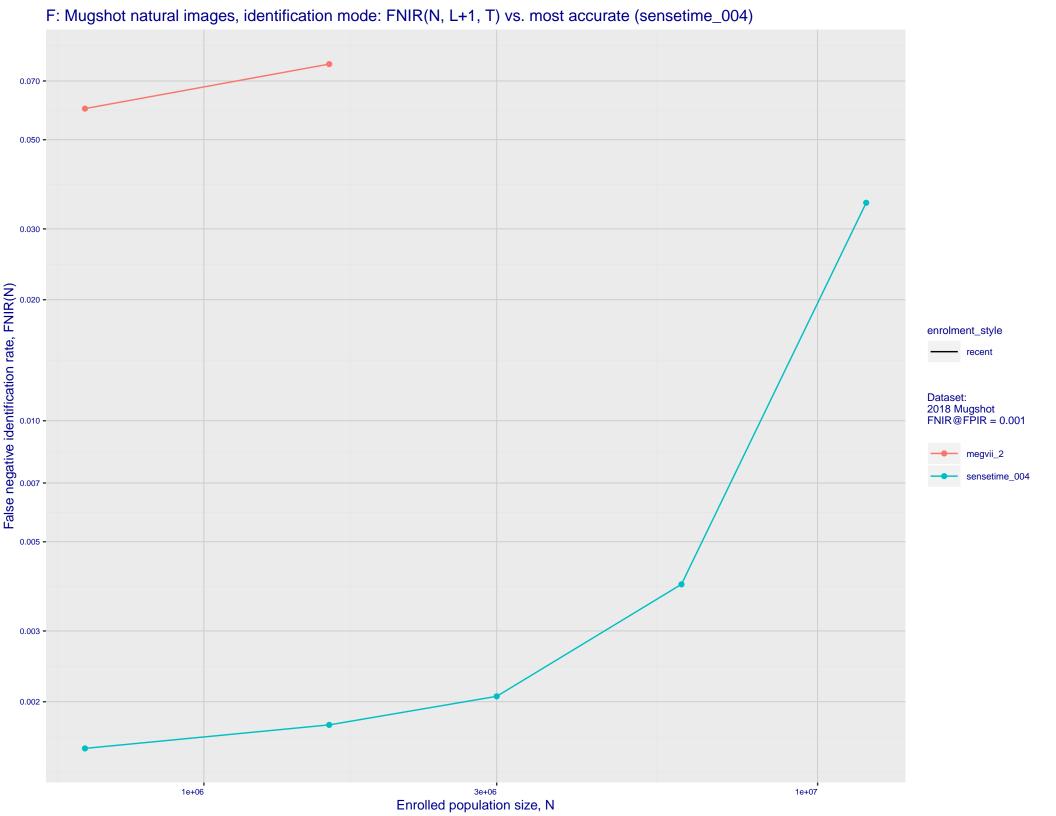




C: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 5e+01 3e+01 2e+01 -1e+01 7e+00 5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -Enrolled images: recent N = 1600000 7e-02 - 7e-02 - 7e-03 Mugshot natural Mugshot profile Mugshot webcam 7e-03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



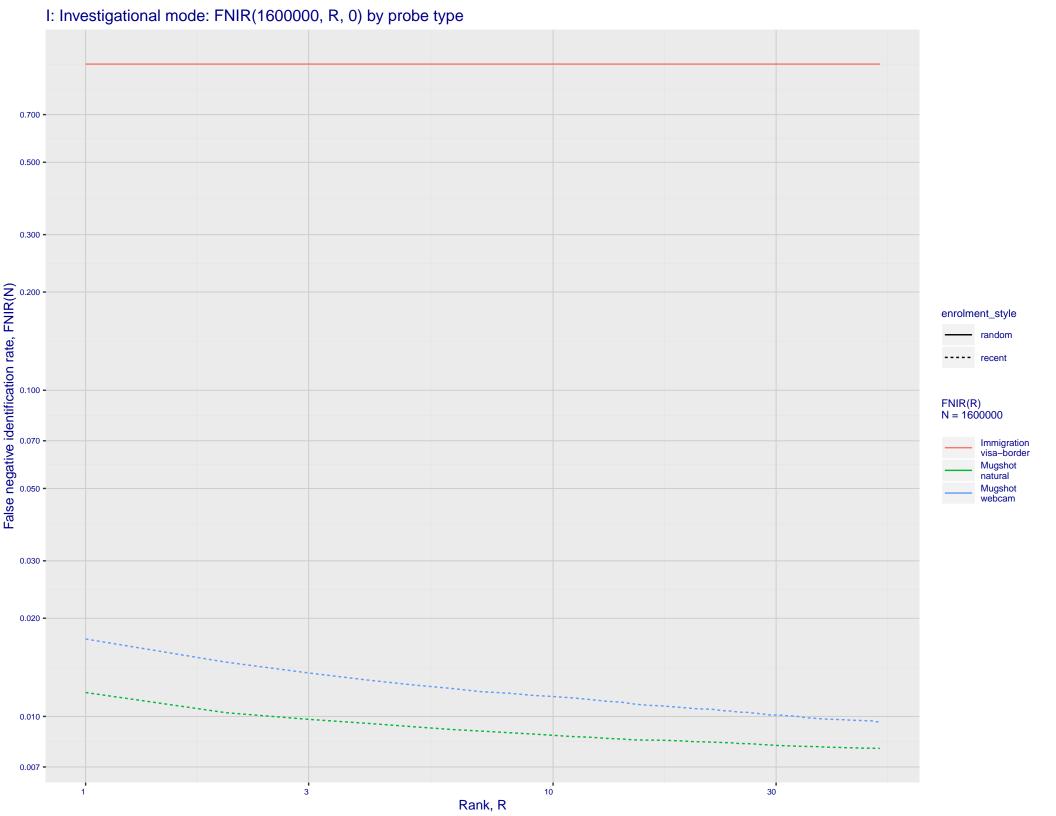




G: Datasheet

Algorithm: megvii_2 Developer: Megvii/Face++ Submission Date: 2018_10_28 Template size: 4096 bytes Template time (2.5 percentile): 634 msec Template time (median): 635 msec Template time (97.5 percentile): 692 msec Frontal mugshot investigation rank 128 -- FNIR(1600000, 0, 1) = 0.0118 vs. lowest 0.0010 from sensetime_004 natural investigation rank 48 -- FNIR(1600000, 0, 1) = 0.0173 vs. lowest 0.0067 from sensetime_003 natural investigation rank 42 -- FNIR(1600000, 0, 1) = 0.2116 vs. lowest 0.0492 from paravision_005 natural investigation rank 42 -- FNIR(1600000, 0, 1) = 0.2116 vs. lowest 0.0492 from paravision_005 natural investigation rank 104 -- FNIR(1600000, 0, 1) = 1.0000 vs. lowest 0.0014 from visionlabs_009 Frontal mugshot identification rank 101 -- FNIR(1600000, T, L+1) = 0.0771 vs. lowest 0.0018 from sensetime_004 natural identification rank 49 -- FNIR(1600000, T, L+1) = 0.0959 vs. lowest 0.0122 from sensetime_003 natural identification rank 111 -- FNIR(1600000, T, L+1) = 0.9970 vs. lowest 0.1020 from sensetime_004 natural identification rank 99 -- FNIR(1600000, T, L+1) = 1.0000 vs. lowest 0.0059 from sensetime_004

H: Investigational mode: FNIR(N, 1, 0) vs. most accurate (yitu_4) Immigration Mugshot visa-border natural webcam 0.700 -0.500 -0.300 -0.200 -Ealse negative identification rate, FNIR(N) enrolment_style random --- recent FNIR@Rank = 1 megvii_2 0.005 -0.003 -0.002 -0.001 -1e+07 1e+06 1e+06 1e+07 1e+06 3e+06 3e+06 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

