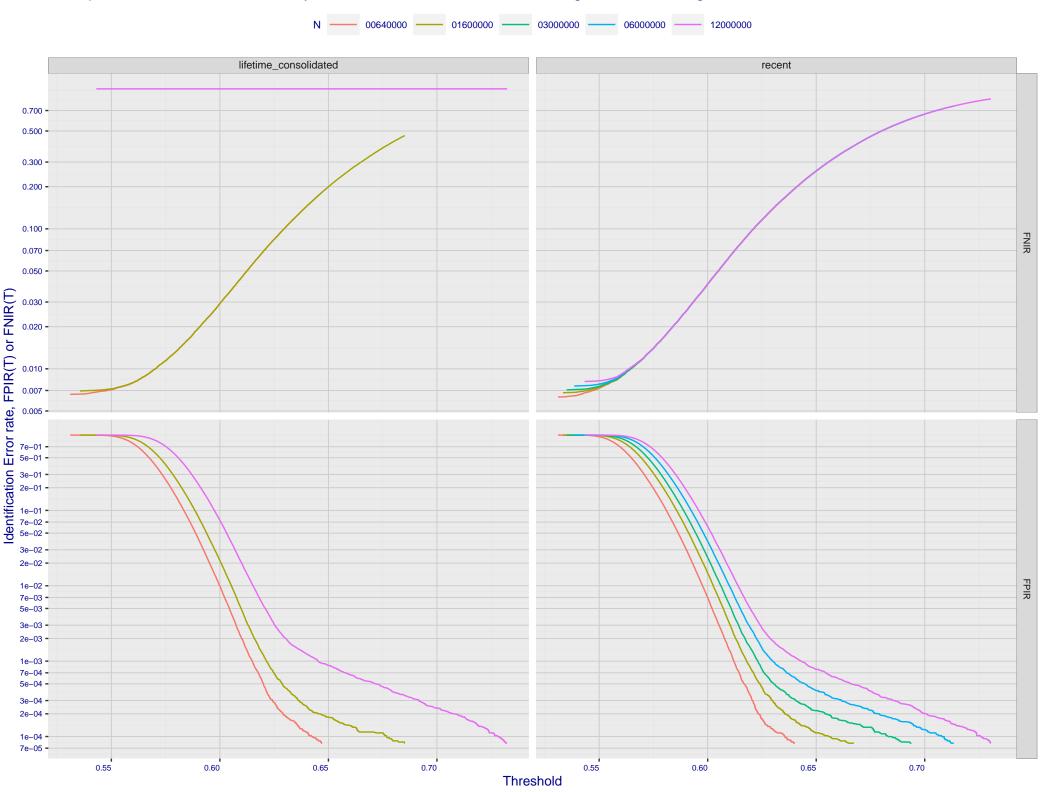
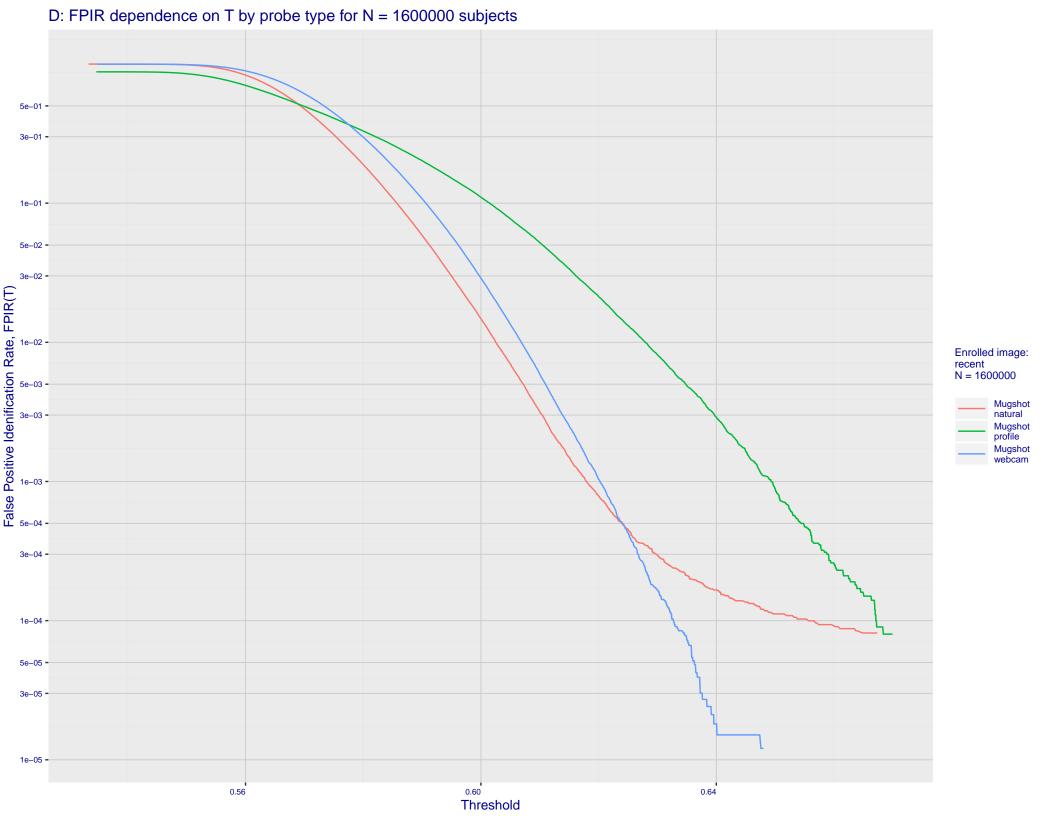
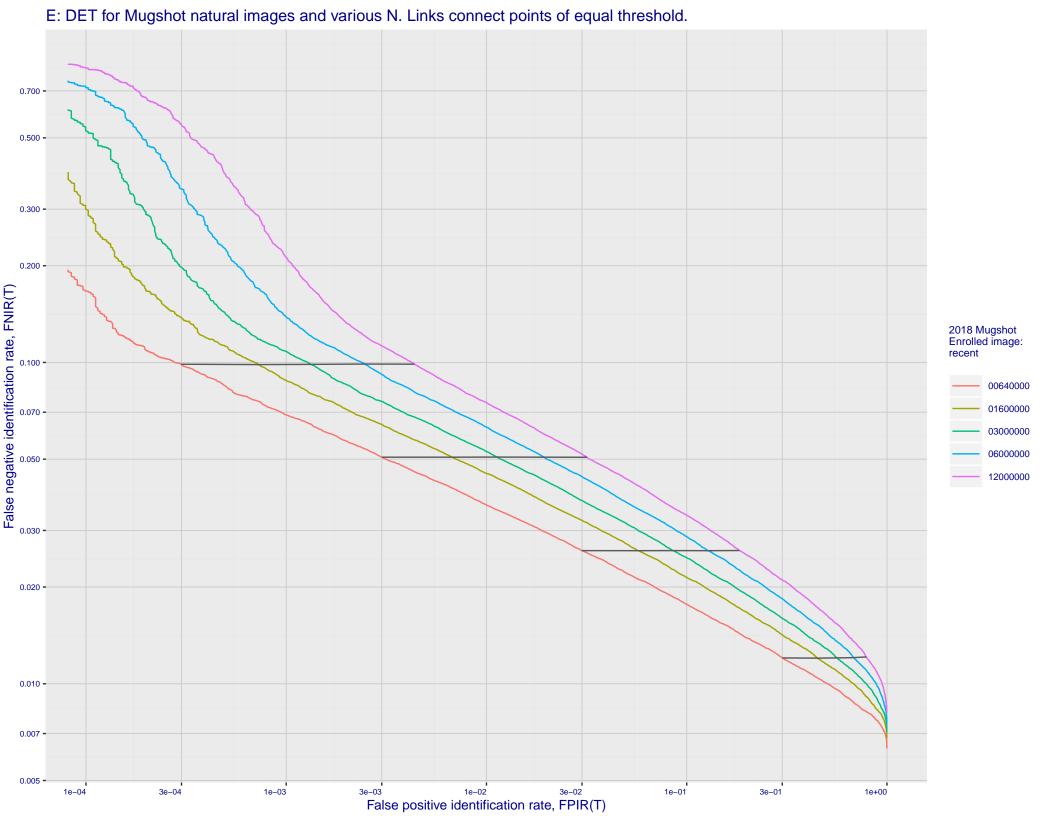
A: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -False negative identification rate, FNIR(T) enrolment_style consolidated-ONE-MATE random-ONE-MATE recent-ONE-MATE unconsolidated-ALL-MATES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

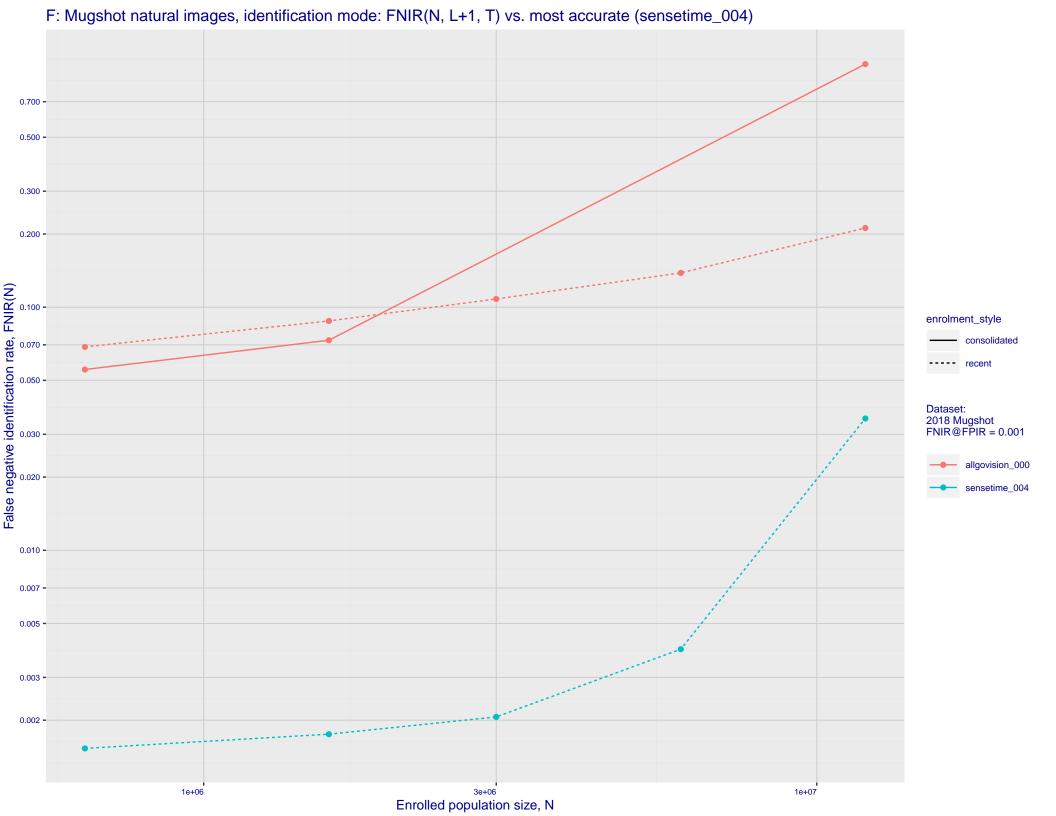
B: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



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

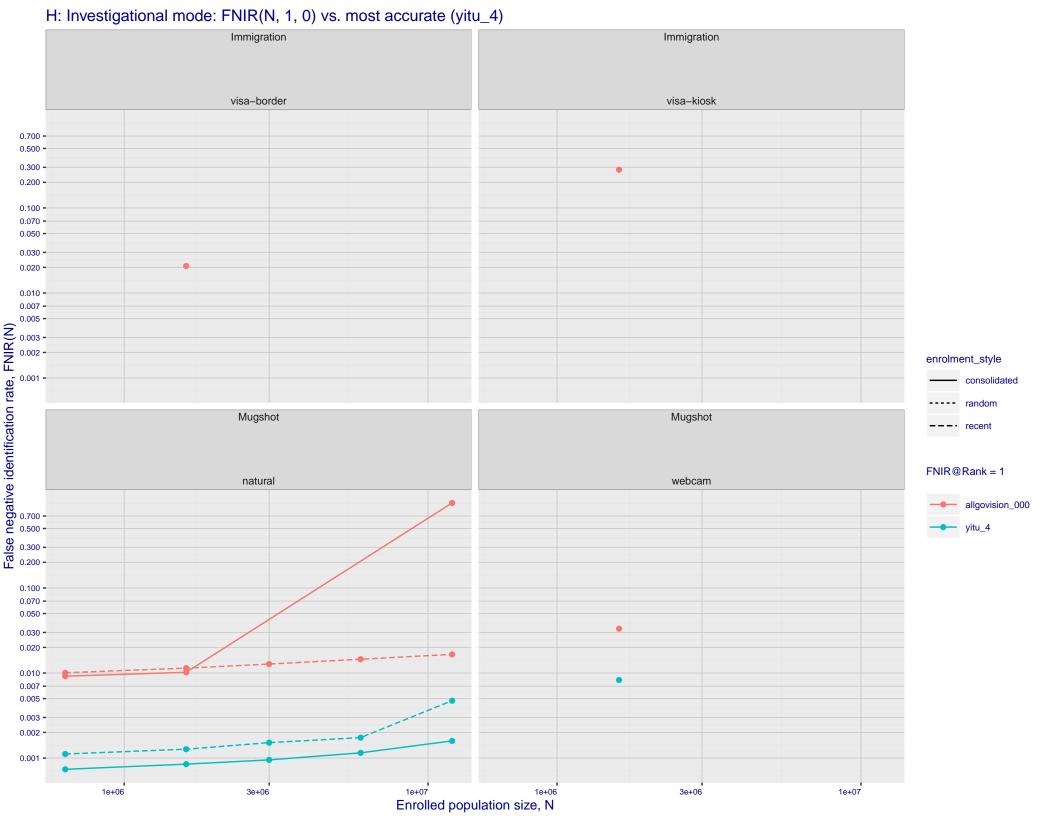


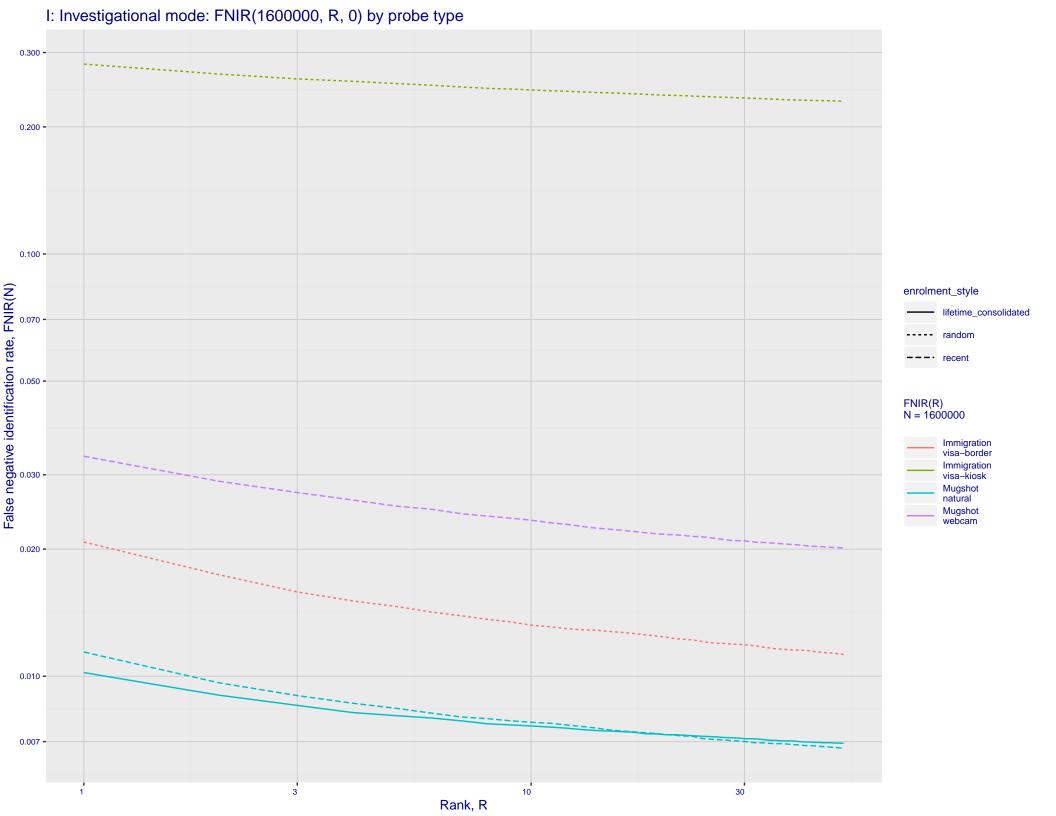




G: Datasheet

Algorithm: allgovision_000 Developer: AllGoVision Submission Date: 2019_07_30 Template size: 2048 bytes Template time (2.5 percentile): 381 msec Template time (median): 405 msec Template time (97.5 percentile): 631 msec Frontal mugshot investigation rank 124 -- FNIR(1600000, 0, 1) = 0.0114 vs. lowest 0.0010 from sensetime_004 natural investigation rank 101 -- FNIR(1600000, 0, 1) = 0.0332 vs. lowest 0.0067 from sensetime_003 natural investigation rank 198 -- FNIR(1600000, 0, 1) = 0.8270 vs. lowest 0.0492 from paravision_005 natural investigation rank 198 -- FNIR(1600000, 0, 1) = 0.8270 vs. lowest 0.0492 from paravision_005 natural investigation rank 59 -- FNIR(1600000, 0, 1) = 0.0208 vs. lowest 0.0014 from visionlabs_009 natural investigation rank 78 -- FNIR(1600000, 0, 1) = 0.2817 vs. lowest 0.0694 from cib_000 Frontal mugshot identification rank 113 -- FNIR(1600000, T, L+1) = 0.0878 vs. lowest 0.0018 from sensetime_004 natural identification rank 104 -- FNIR(1600000, T, L+1) = 0.1659 vs. lowest 0.0122 from sensetime_003 natural identification rank 73 -- FNIR(1600000, T, L+1) = 0.9803 vs. lowest 0.1020 from sensetime_004 natural identification rank 52 -- FNIR(1600000, T, L+1) = 0.1178 vs. lowest 0.0059 from sensetime_004 natural identification rank 52 -- FNIR(1600000, T, L+1) = 0.5268 vs. lowest 0.1129 from visionlabs_009





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

