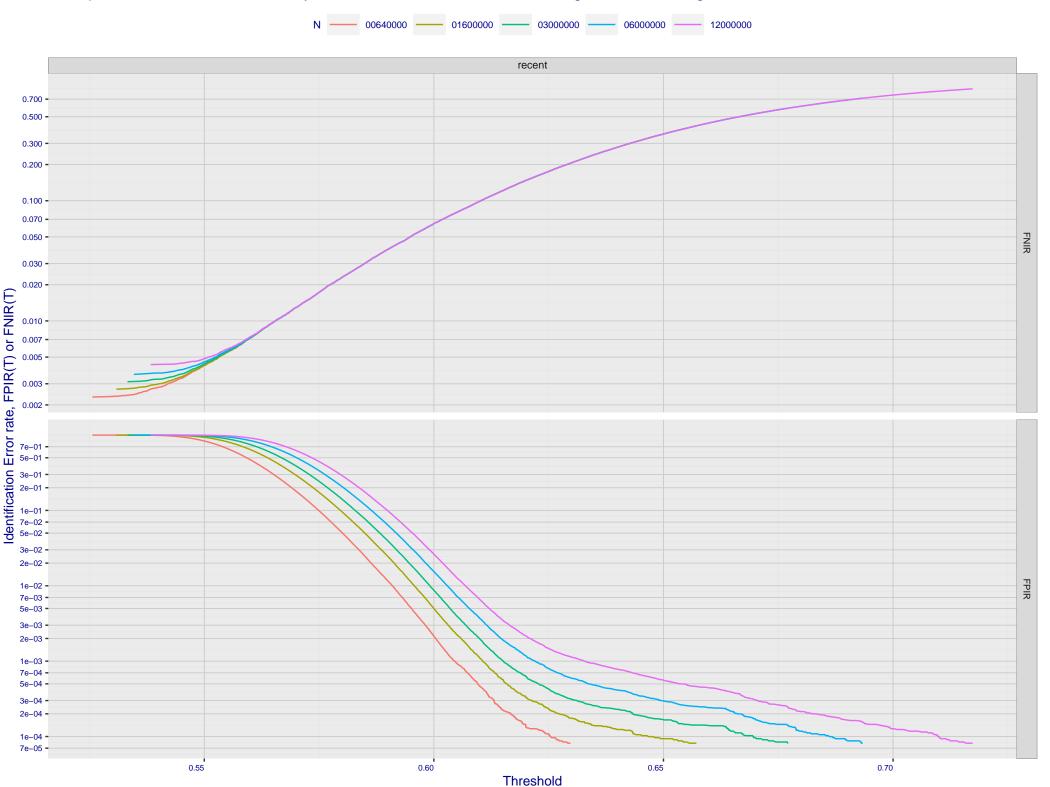
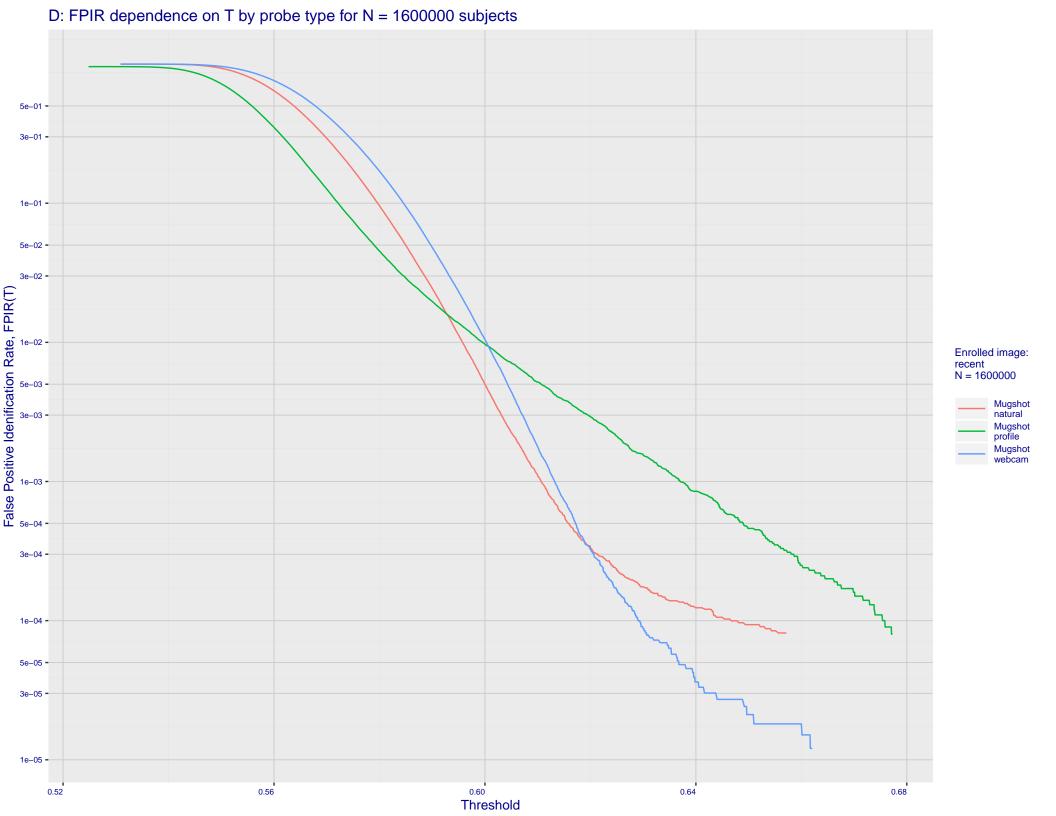
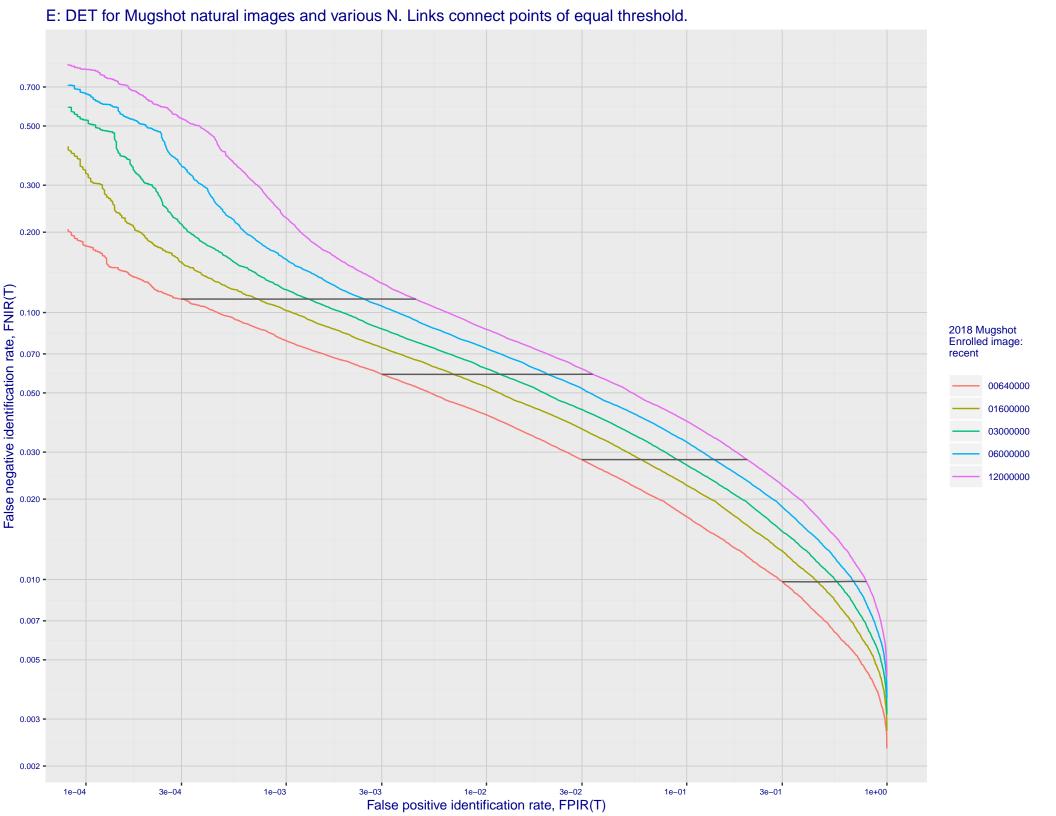
A: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 0.500 -0.300 -0.200 -False negative identification rate, FNIR(T) enrolment\_style random-ONE-MATE recent-ONE-MATE unconsolidated-ALL-MATES unconsolidated-ANY-MATE 0.010 0.007 -0.005 -0.003 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)

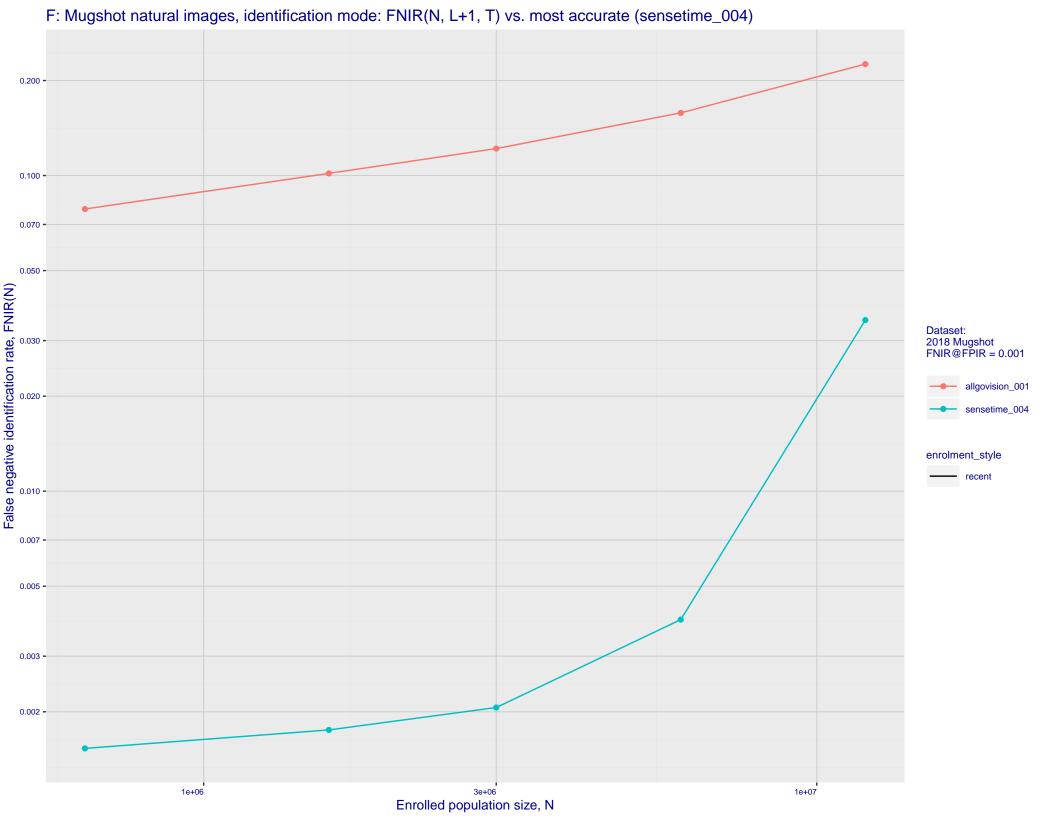
B: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



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 -5e-02 -3e-02 -2e-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)

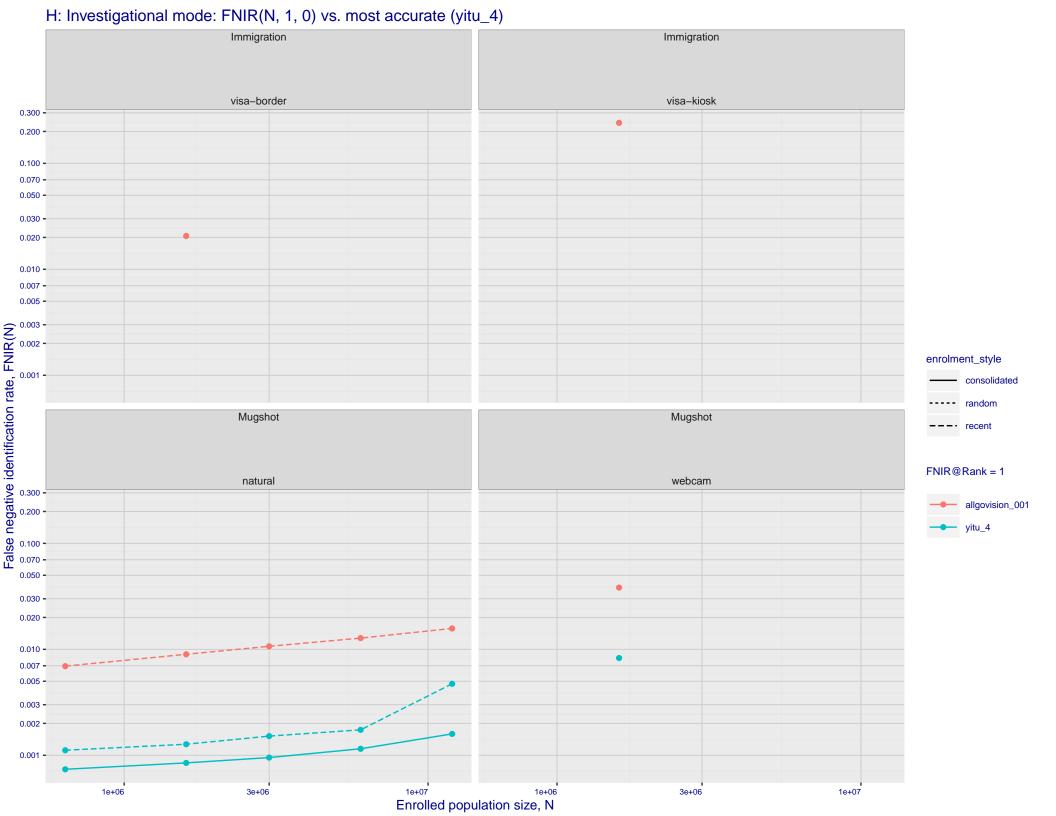


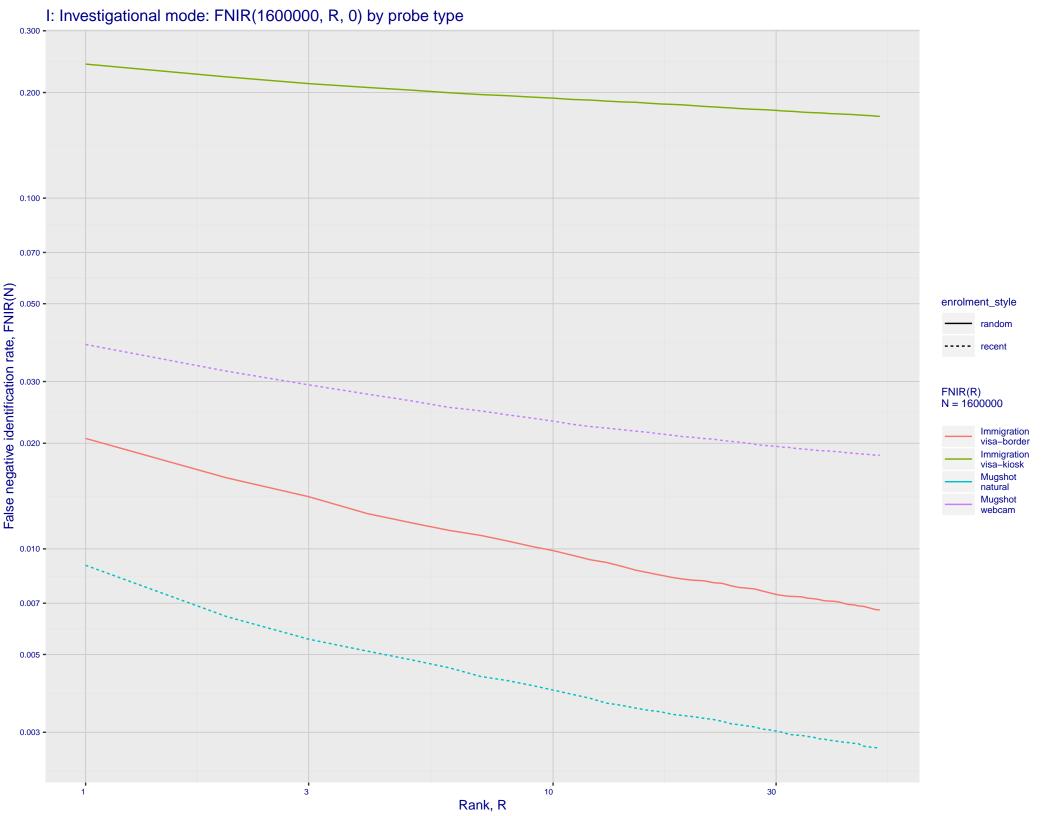




## G: Datasheet

Algorithm: allgovision\_001 Developer: AllGoVision Submission Date: 2020\_07\_14 Template size: 2048 bytes Template time (2.5 percentile): 772 msec Template time (median): 778 msec Template time (97.5 percentile): 851 msec Frontal mugshot investigation rank 105 -- FNIR(1600000, 0, 1) = 0.0090 vs. lowest 0.0010 from sensetime\_004 natural investigation rank 116 -- FNIR(1600000, 0, 1) = 0.0383 vs. lowest 0.0067 from sensetime\_003 natural investigation rank 93 -- FNIR(1600000, 0, 1) = 0.4893 vs. lowest 0.0492 from paravision\_005 natural investigation rank 93 -- FNIR(1600000, 0, 1) = 0.4893 vs. lowest 0.0492 from paravision\_005 natural investigation rank 58 -- FNIR(1600000, 0, 1) = 0.0206 vs. lowest 0.0014 from visionlabs\_009 natural investigation rank 71 -- FNIR(1600000, 0, 1) = 0.2411 vs. lowest 0.0694 from cib\_000 Frontal mugshot identification rank 122 -- FNIR(1600000, T, L+1) = 0.1016 vs. lowest 0.0018 from sensetime\_004 natural identification rank 119 -- FNIR(1600000, T, L+1) = 0.2204 vs. lowest 0.0122 from sensetime\_003 natural identification rank 52 -- FNIR(1600000, T, L+1) = 0.9595 vs. lowest 0.1020 from sensetime\_004 natural identification rank 60 -- FNIR(1600000, T, L+1) = 0.1503 vs. lowest 0.0059 from sensetime\_004 natural identification rank 48 -- FNIR(1600000, T, L+1) = 0.4926 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

