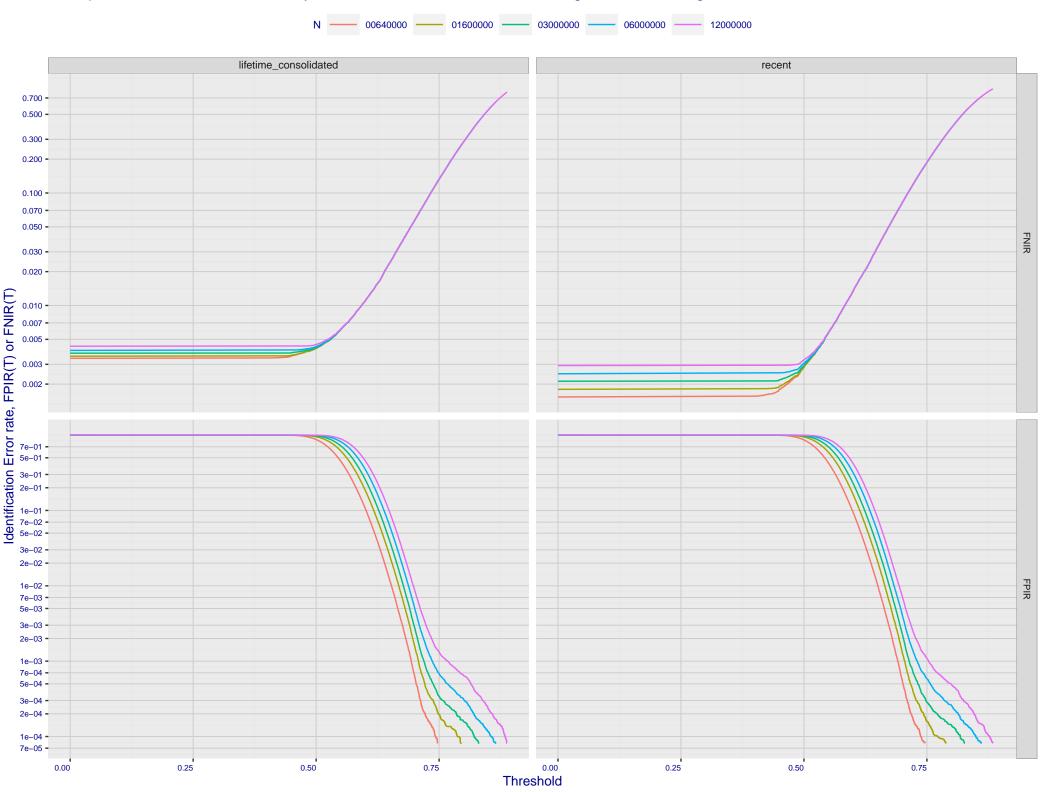
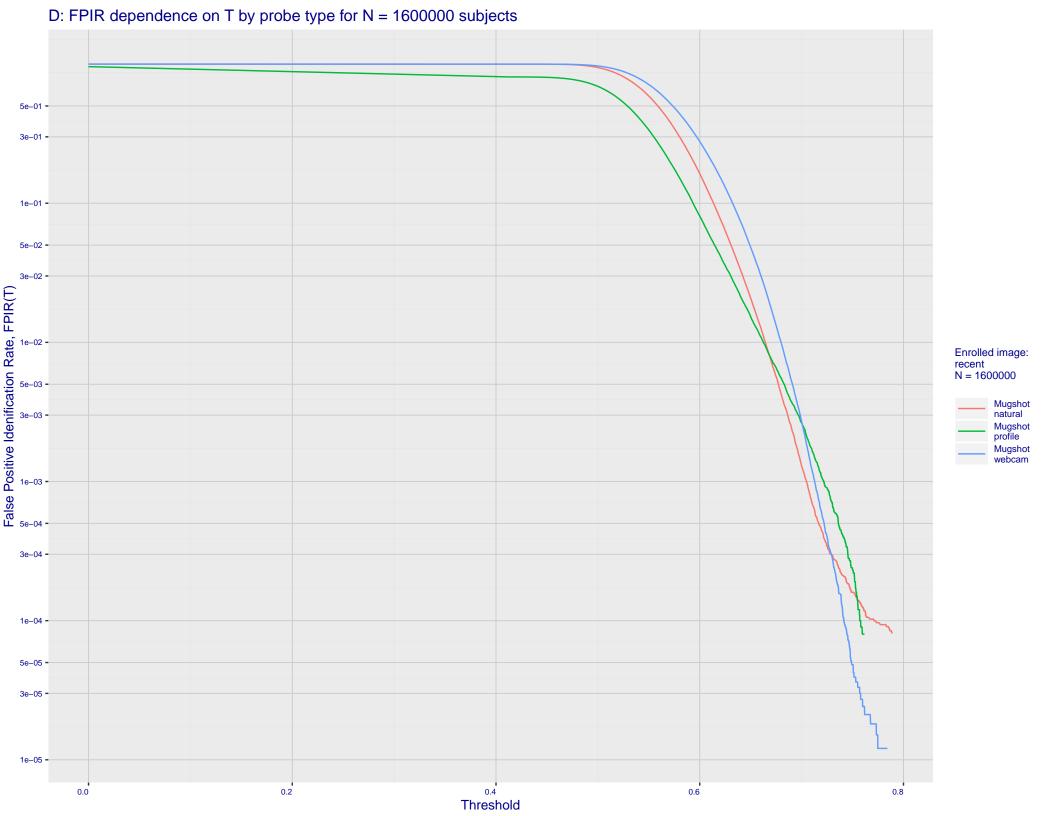
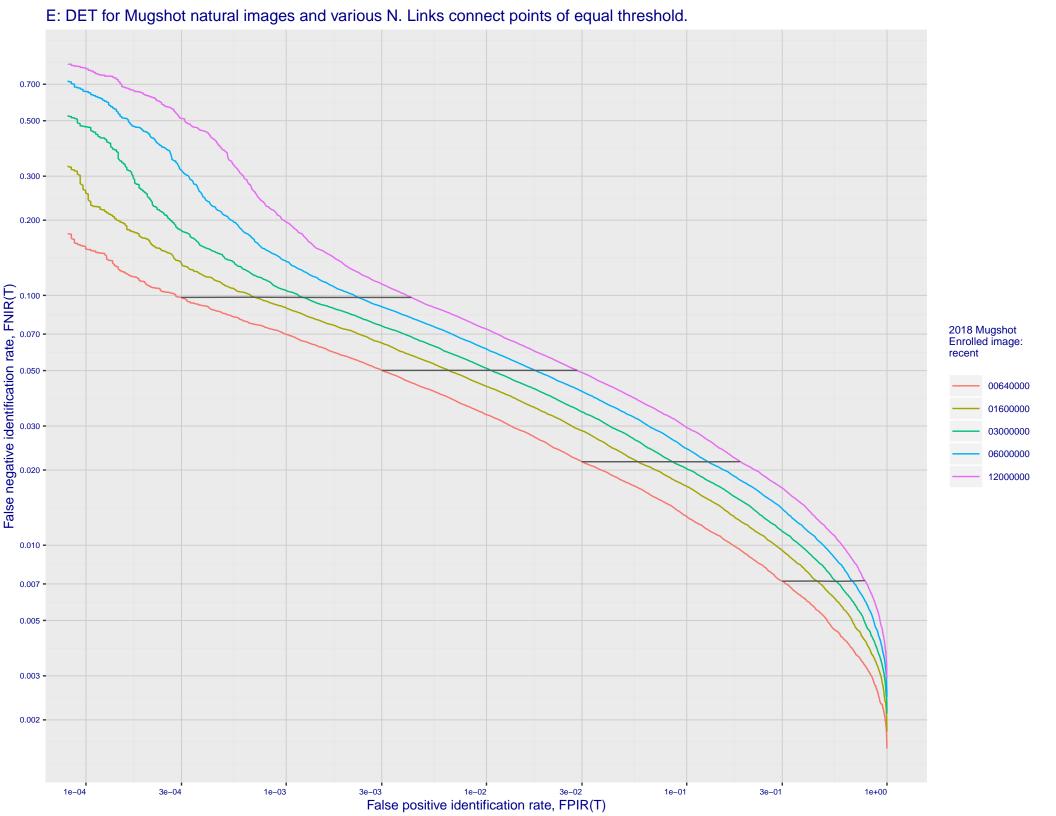
A: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 0.500 -0.300 -0.200 False negative identification rate, FNIR(T) enrolment_style consolidated-ONE-MATE random-ONE-MATE recent-ONE-MATE unconsolidated-ALL-MATES unconsolidated-ANY-MATE 0.010 -0.007 0.005 -0.003 0.002 -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)

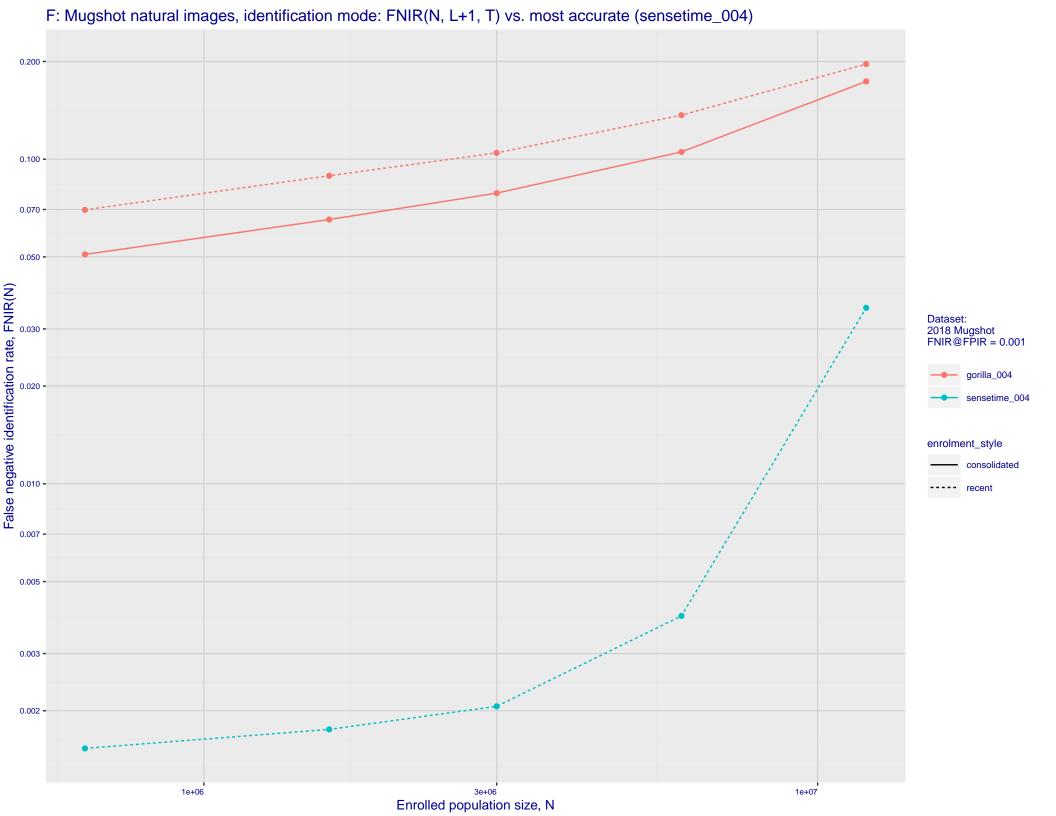
B: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



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

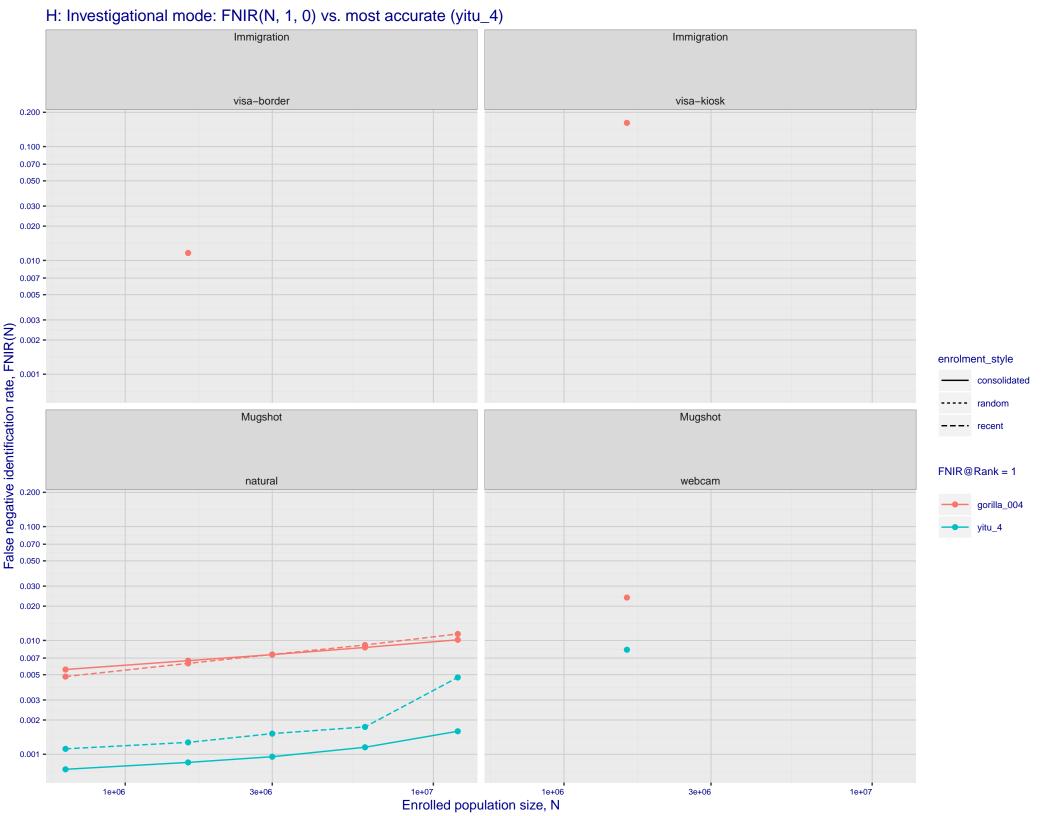


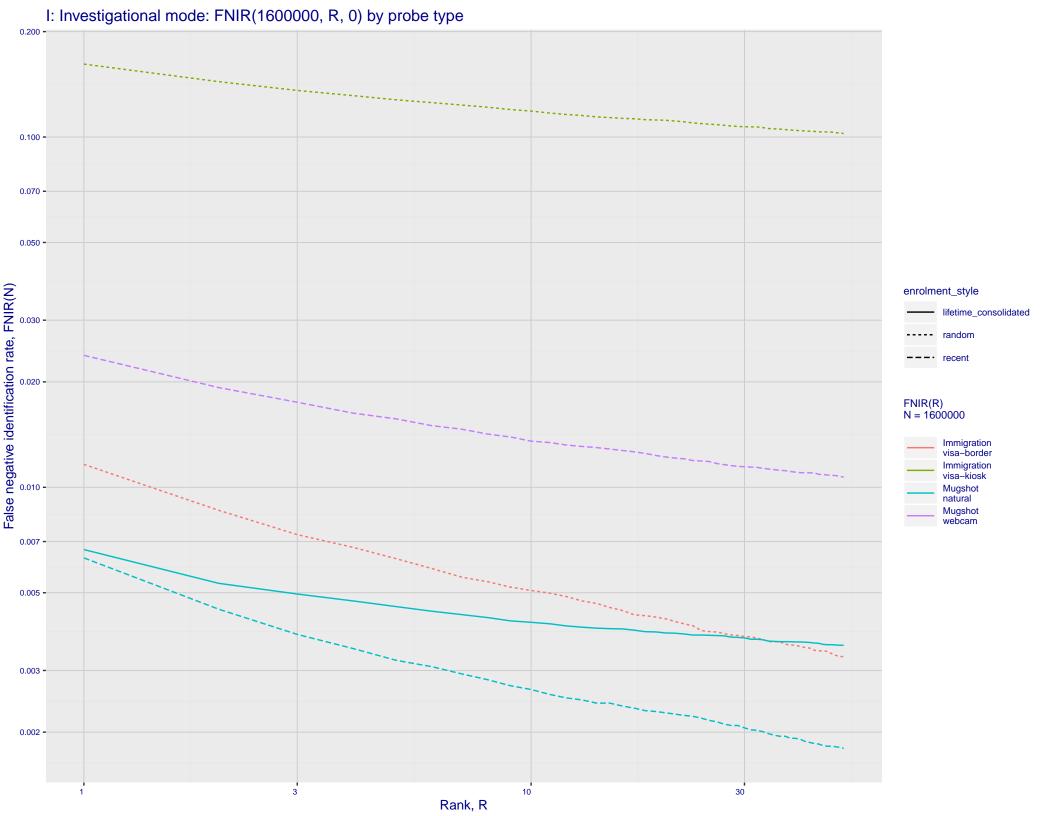




G: Datasheet

Algorithm: gorilla_004 Developer: Gorilla Technology Submission Date: 2020_01_06 Template size: 2192 bytes Template time (2.5 percentile): 385 msec Template time (median): 388 msec Template time (97.5 percentile): 423 msec Frontal mugshot investigation rank 83 — FNIR(1600000, 0, 1) = 0.0063 vs. lowest 0.0010 from sensetime_004 natural investigation rank 82 -- FNIR(1600000, 0, 1) = 0.0238 vs. lowest 0.0067 from sensetime_003 natural investigation rank 110 -- FNIR(1600000, 0, 1) = 0.5355 vs. lowest 0.0492 from paravision_005 natural investigation rank 110 -- FNIR(1600000, 0, 1) = 0.5355 vs. lowest 0.0492 from paravision_005 natural investigation rank 51 -- FNIR(1600000, 0, 1) = 0.0116 vs. lowest 0.0014 from visionlabs_009 natural investigation rank 52 -- FNIR(1600000, 0, 1) = 0.1615 vs. lowest 0.0694 from cib_000 Frontal mugshot identification rank 117 -- FNIR(1600000, T, L+1) = 0.0889 vs. lowest 0.0018 from sensetime_004 natural identification rank 100 -- FNIR(1600000, T, L+1) = 0.1601 vs. lowest 0.0122 from sensetime_003 natural identification rank 32 -- FNIR(1600000, T, L+1) = 0.8899 vs. lowest 0.1020 from sensetime_004 natural identification rank 57 -- FNIR(1600000, T, L+1) = 0.1350 vs. lowest 0.0059 from sensetime_004 natural identification rank 43 -- FNIR(1600000, T, L+1) = 0.4381 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

