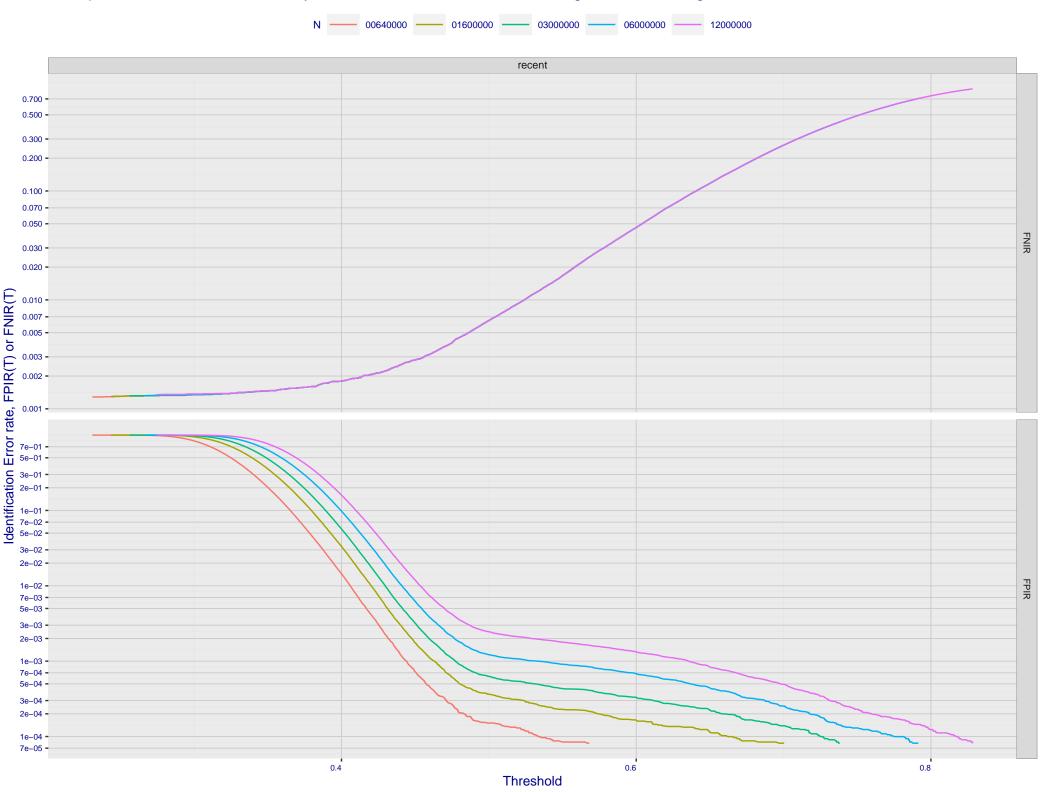
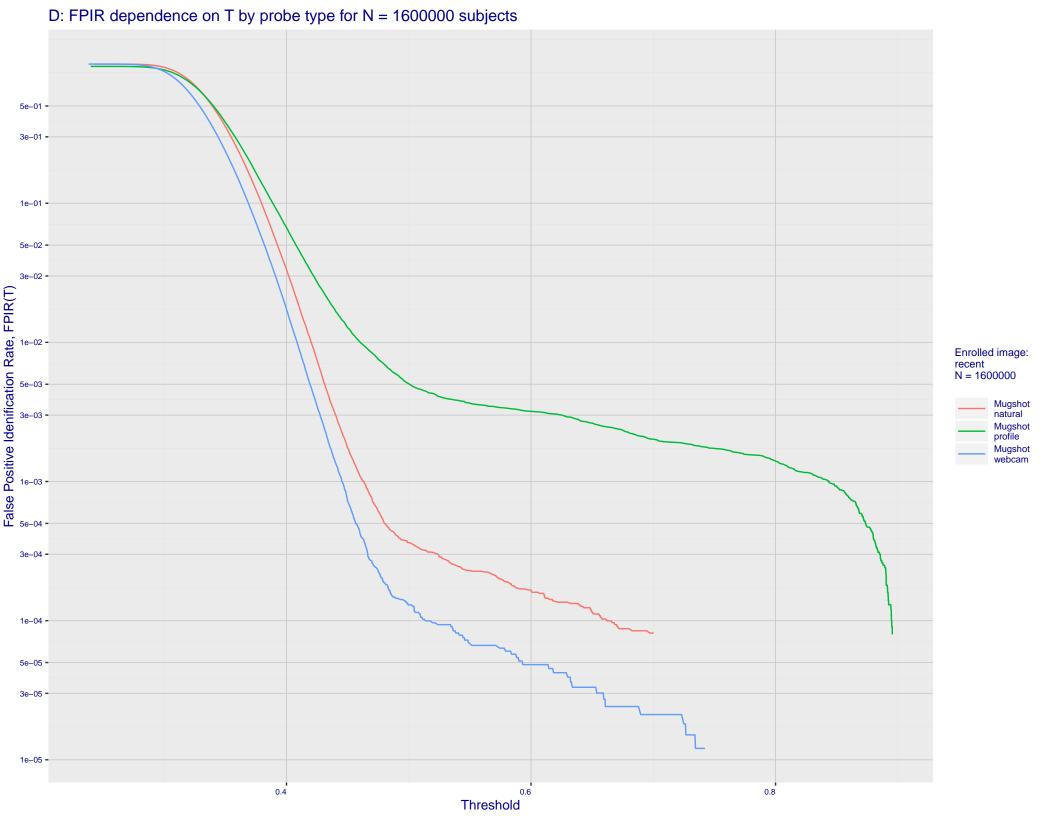
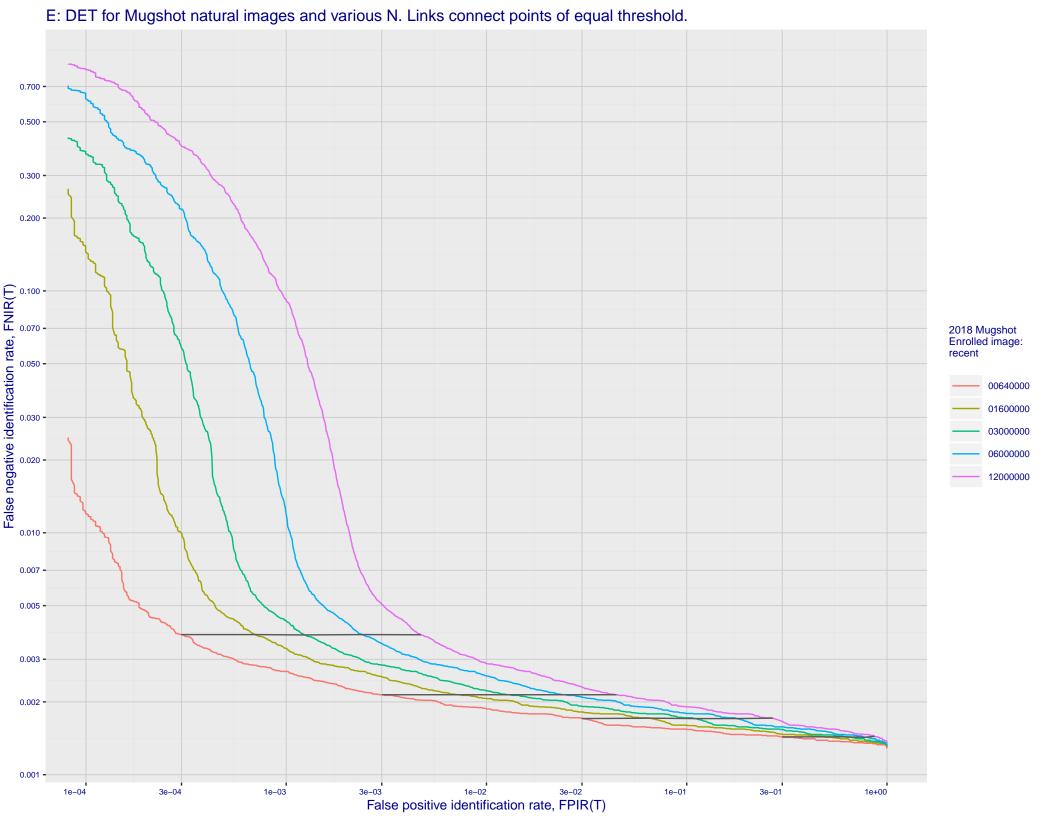
A: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-border visa-kiosk natural 0.700 -0.500 -0.300 -0.200 -False negative identification rate, FNIR(T) enrolment\_style random-ONE-MATE recent-ONE-MATE unconsolidated-ALL-MATES unconsolidated-ANY-MATE 0.007 0.005 0.003 -0.002 -0.001 -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+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)

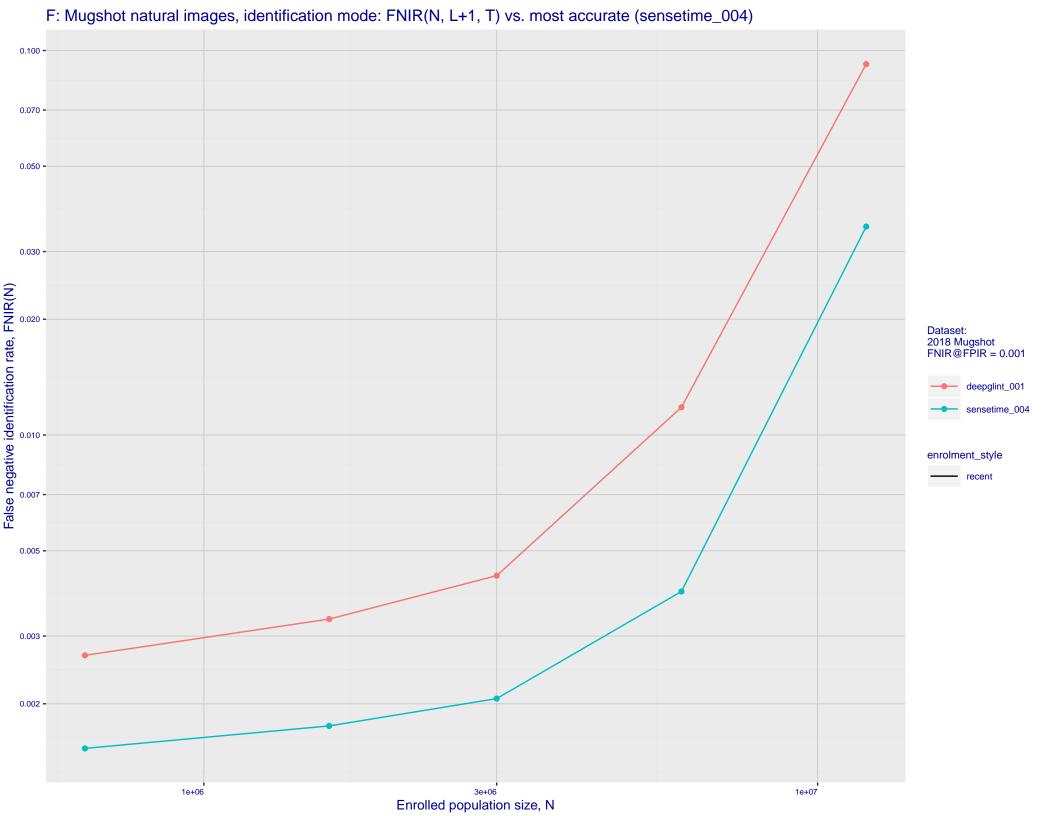
B: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



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 -7e-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 3e-05 1e-04 3e-04 1e-01 3e-01 False Positive Idenification Rate, FPIR(T)



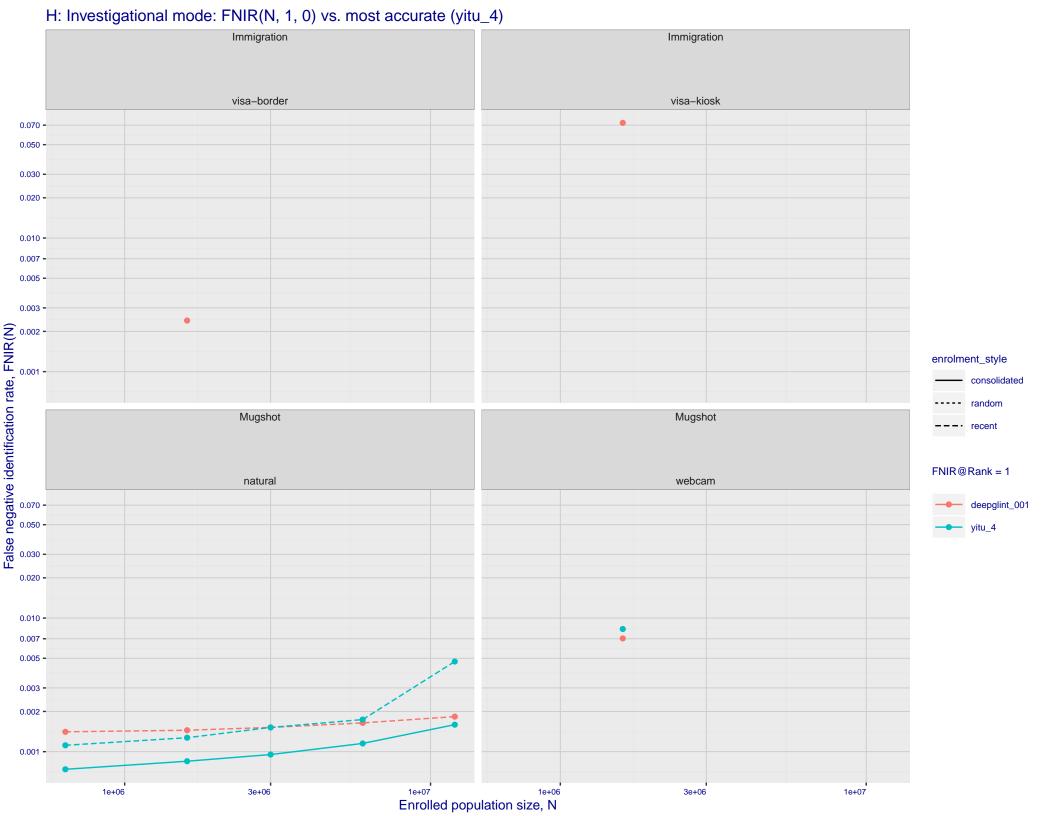


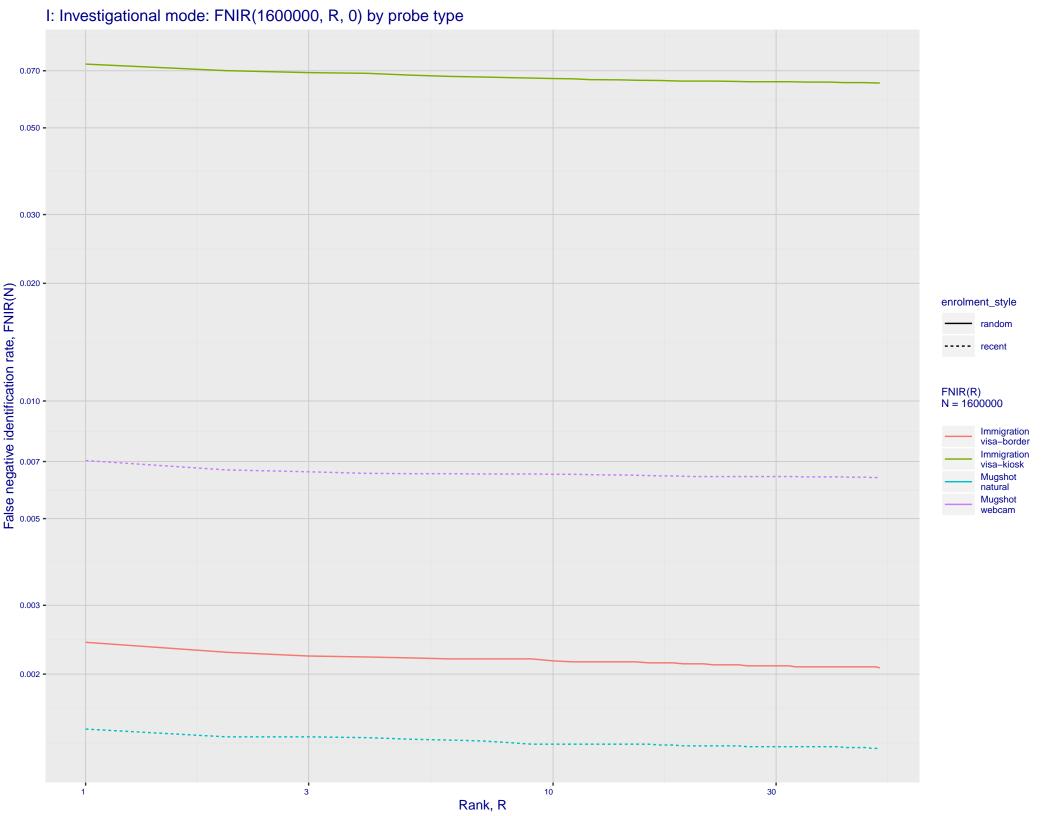


## G: Datasheet

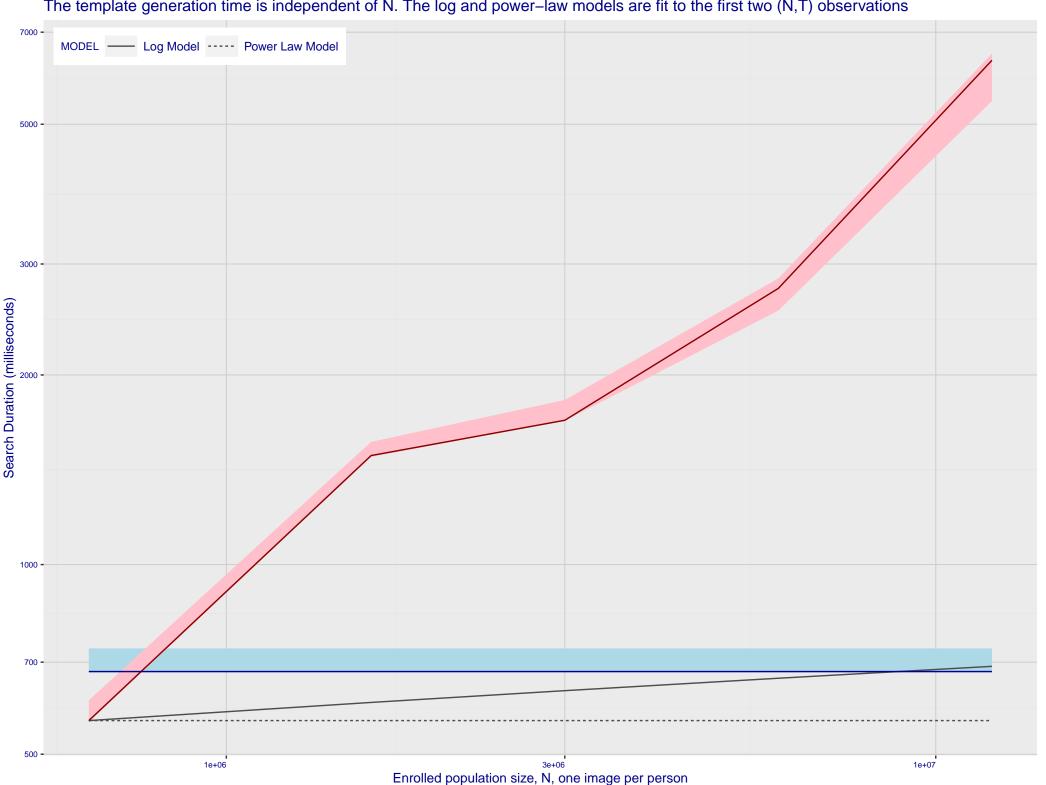
Algorithm: deepglint\_001 Developer: Deepglint Submission Date: 2019\_11\_15 Template size: 4096 bytes Template time (2.5 percentile): 675 msec Template time (median): 676 msec Template time (97.5 percentile): 736 msec Frontal mugshot investigation rank 8 -- FNIR(1600000, 0, 1) = 0.0014 vs. lowest 0.0010 from sensetime\_004 natural investigation rank 3 — FNIR(1600000, 0, 1) = 0.0070 vs. lowest 0.0067 from sensetime\_003 natural investigation rank 19 -- FNIR(1600000, 0, 1) = 0.1035 vs. lowest 0.0492 from paravision\_005 natural investigation rank 19 -- FNIR(1600000, 0, 1) = 0.1035 vs. lowest 0.0492 from paravision\_005 natural investigation rank 6 -- FNIR(1600000, 0, 1) = 0.0024 vs. lowest 0.0014 from visionlabs\_009 natural investigation rank 4 -- FNIR(1600000, 0, 1) = 0.0728 vs. lowest 0.0694 from cib\_000 Frontal mugshot identification rank 5 -- FNIR(1600000, T, L+1) = 0.0033 vs. lowest 0.0018 from sensetime\_004 natural identification rank 3 -- FNIR(1600000, T, L+1) = 0.0138 vs. lowest 0.0122 from sensetime\_003 natural identification rank 124 -- FNIR(1600000, T, L+1) = 0.9985 vs. lowest 0.1020 from sensetime\_004 natural identification rank 2 -- FNIR(1600000, T, L+1) = 0.0064 vs. lowest 0.0059 from sensetime\_004

natural identification rank 8 -- FNIR(1600000, T, L+1) = 0.1646 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



M: Identification FNIR(N, T, L+1) and Investigational FNIR(N, 0, R) under ageing

