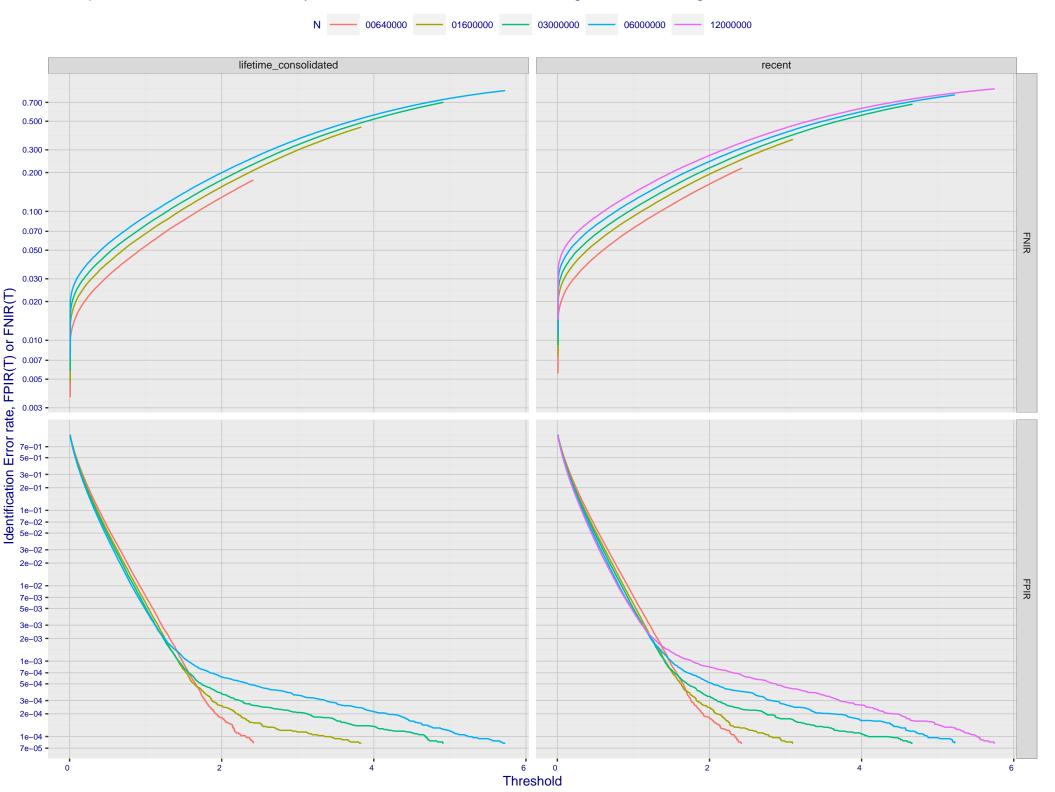
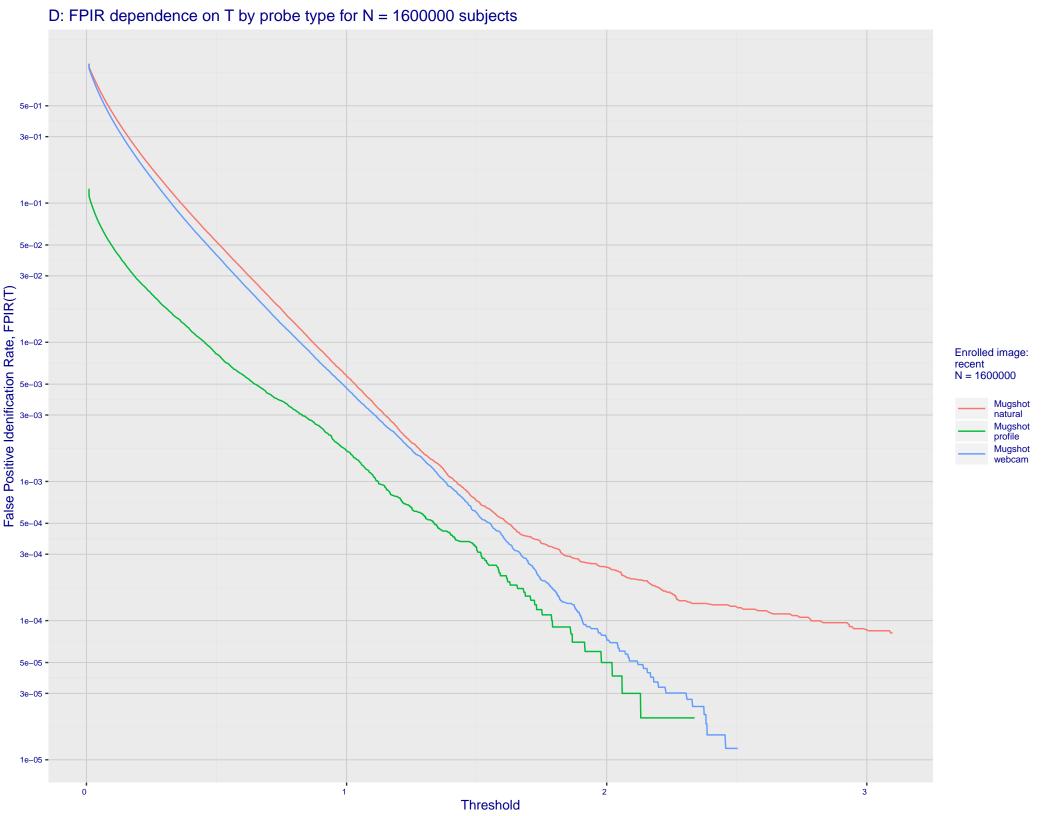
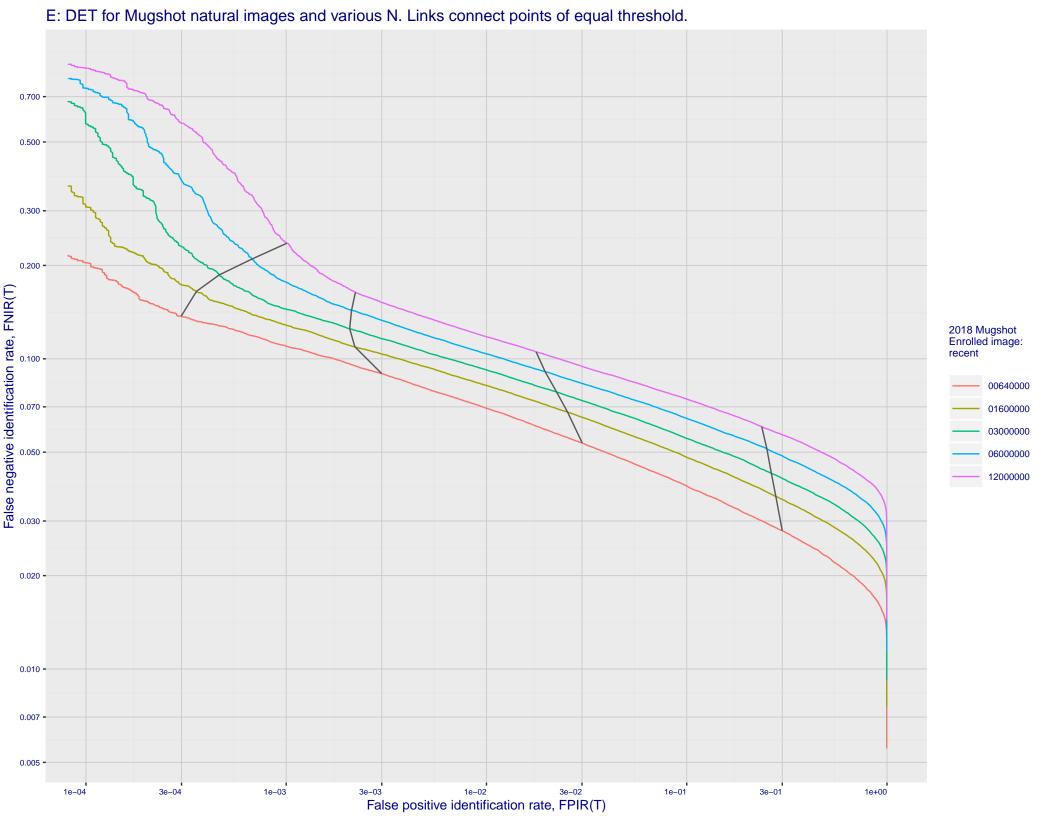
A: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-kiosk visa-border natural 0.700 0.500 -0.300 -0.200 -False negative identification rate, FNIR(T) enrolment\_style consolidated-ONE-MATE random-ONE-MATE recent-ONE-MATE 0.020 -0.010 -0.007 -0.005 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 1e-01 3e-01 1e-01 False positive identification rate, FPIR(T)

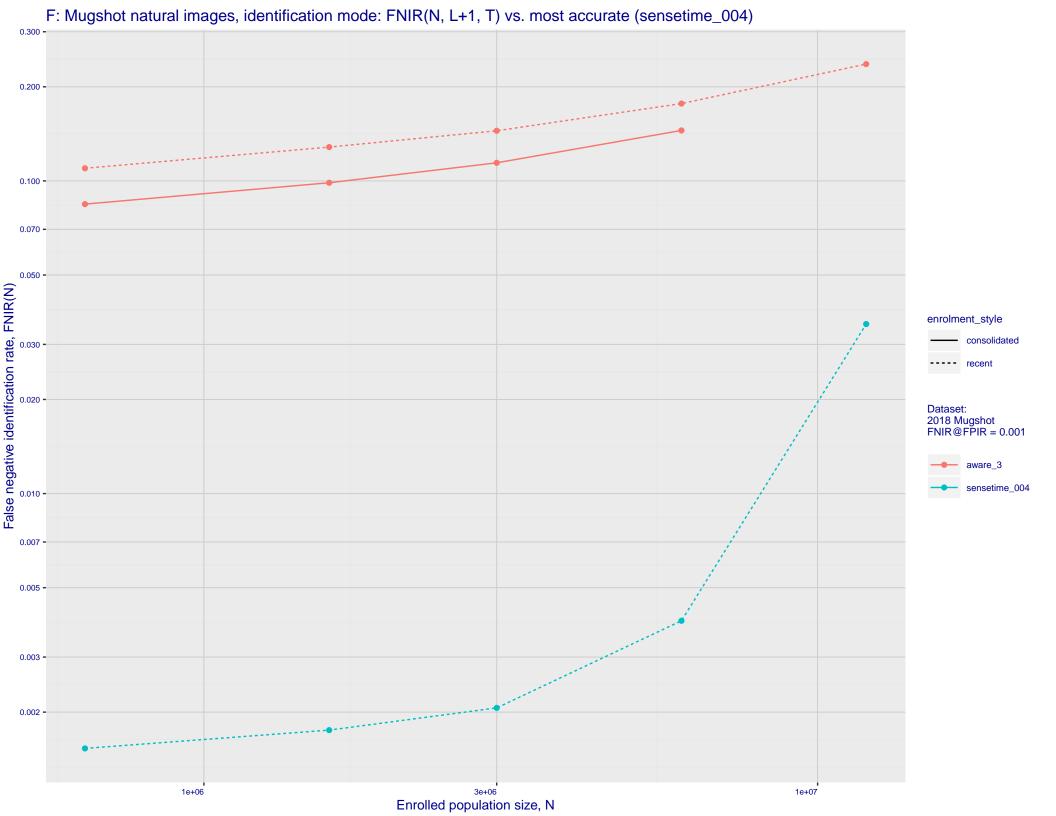
B: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



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)

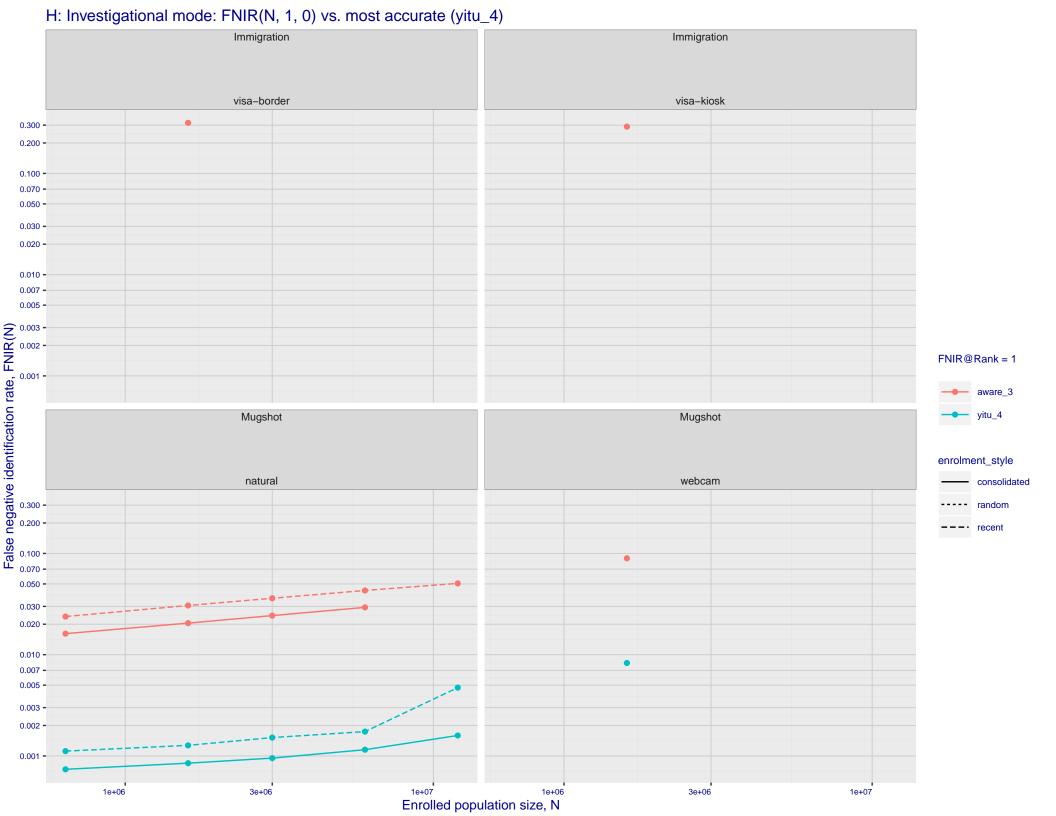


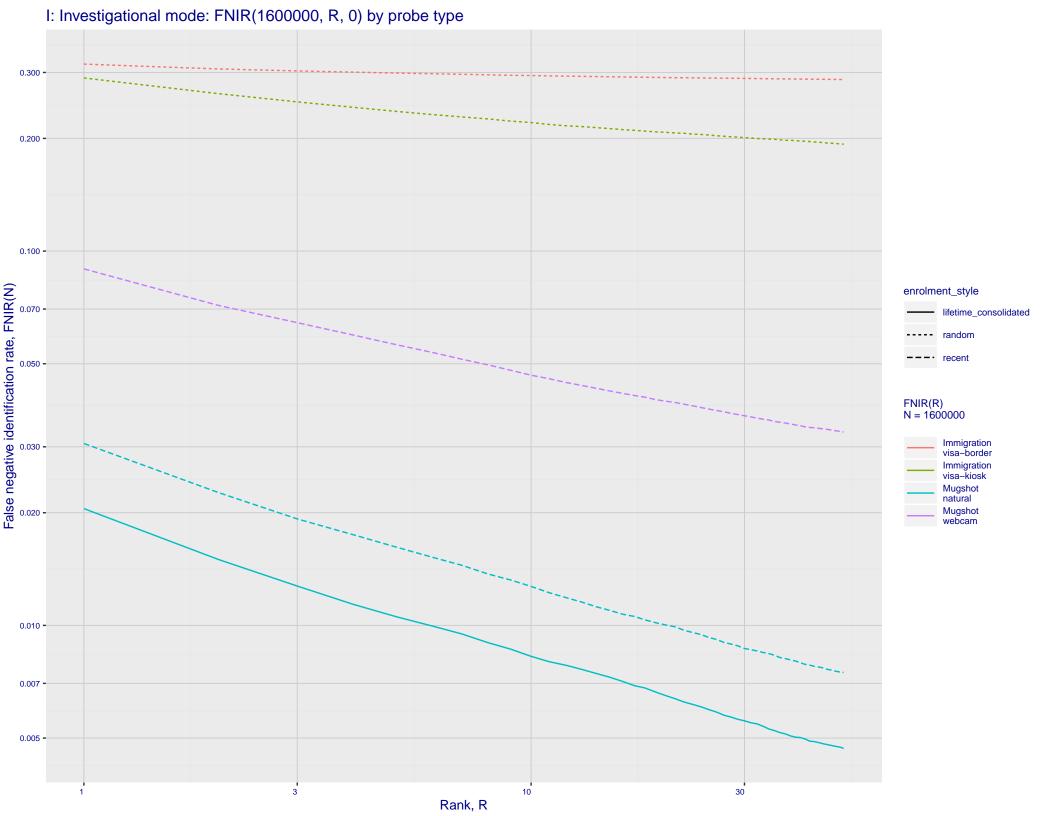




## G: Datasheet

Algorithm: aware\_3 Developer: Aware Submission Date: 2018\_06\_22 Template size: 2076 bytes Template time (2.5 percentile): 676 msec Template time (median): 701 msec Template time (97.5 percentile): 869 msec Frontal mugshot investigation rank 167 — FNIR(1600000, 0, 1) = 0.0306 vs. lowest 0.0010 from sensetime\_004 natural investigation rank 161 -- FNIR(1600000, 0, 1) = 0.0896 vs. lowest 0.0067 from sensetime\_003 natural investigation rank 279 -- FNIR(1600000, 0, 1) = 0.9525 vs. lowest 0.0492 from paravision\_005 natural investigation rank 279 -- FNIR(1600000, 0, 1) = 0.9525 vs. lowest 0.0492 from paravision\_005 natural investigation rank 88 -- FNIR(1600000, 0, 1) = 0.3159 vs. lowest 0.0014 from visionlabs\_009 natural investigation rank 80 -- FNIR(1600000, 0, 1) = 0.2900 vs. lowest 0.0694 from cib\_000 Frontal mugshot identification rank 139 -- FNIR(1600000, T, L+1) = 0.1283 vs. lowest 0.0018 from sensetime\_004 natural identification rank 144 -- FNIR(1600000, T, L+1) = 0.2983 vs. lowest 0.0122 from sensetime\_003 natural identification rank 69 -- FNIR(1600000, T, L+1) = 0.9787 vs. lowest 0.1020 from sensetime\_004 natural identification rank 76 -- FNIR(1600000, T, L+1) = 0.4284 vs. lowest 0.0059 from sensetime\_004 natural identification rank 53 -- FNIR(1600000, T, L+1) = 0.5310 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

