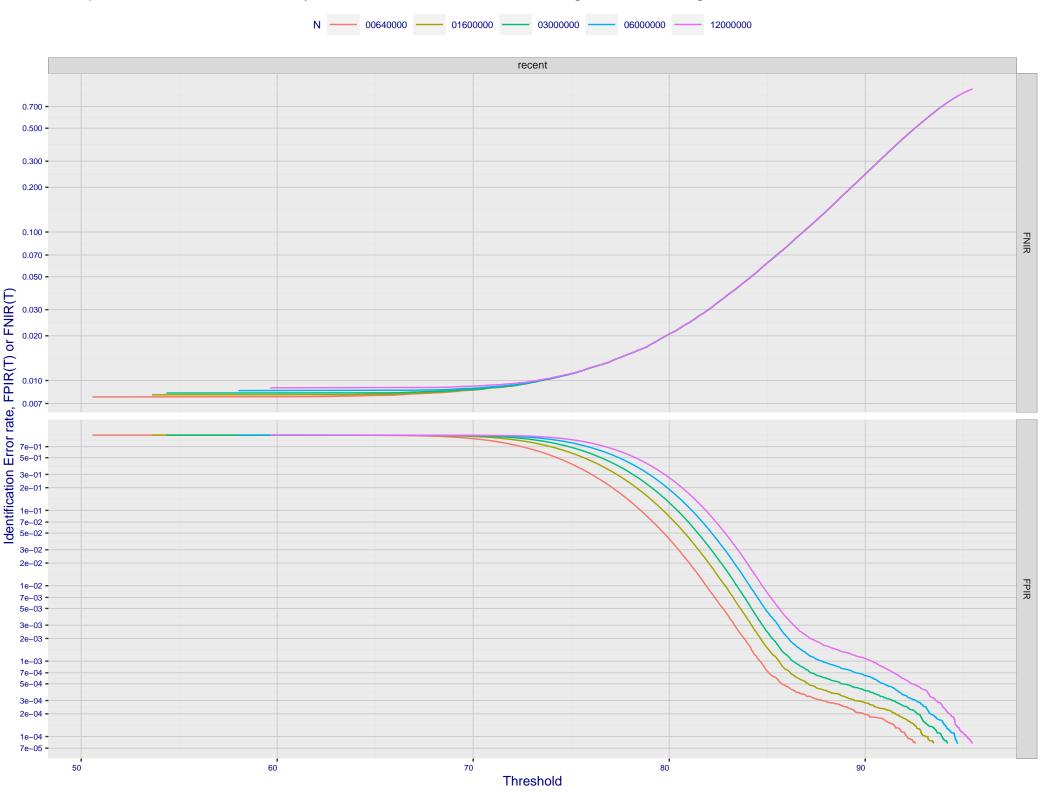
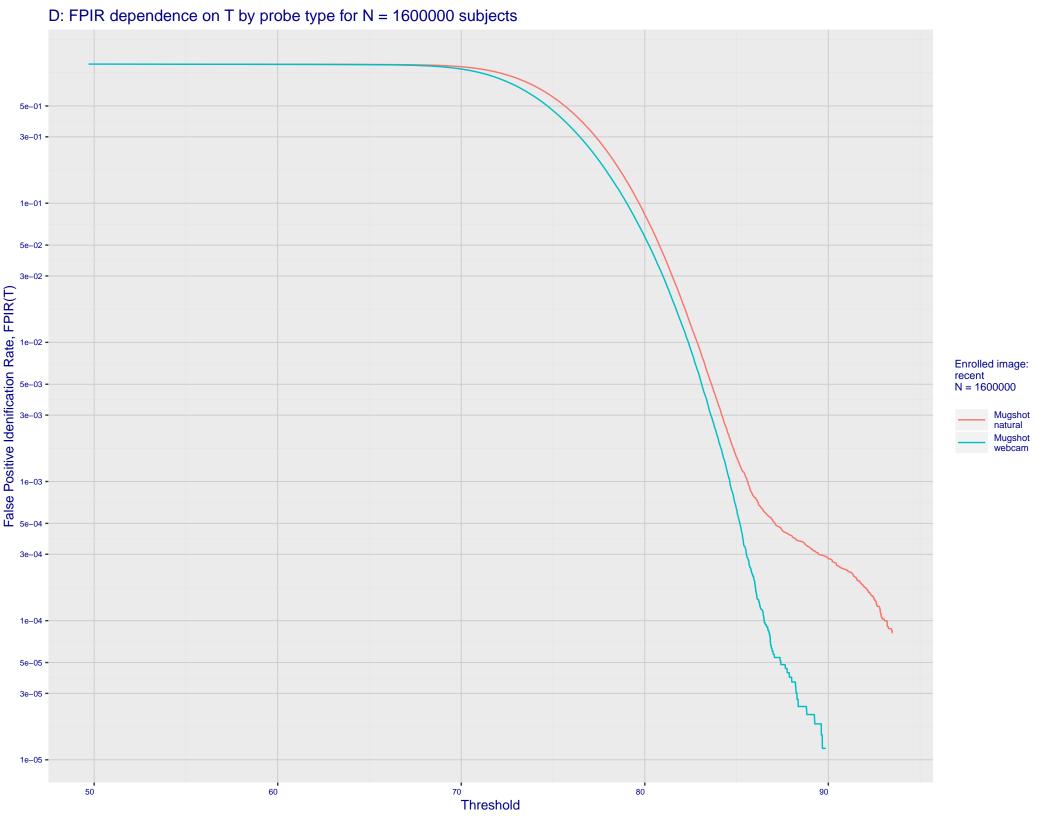
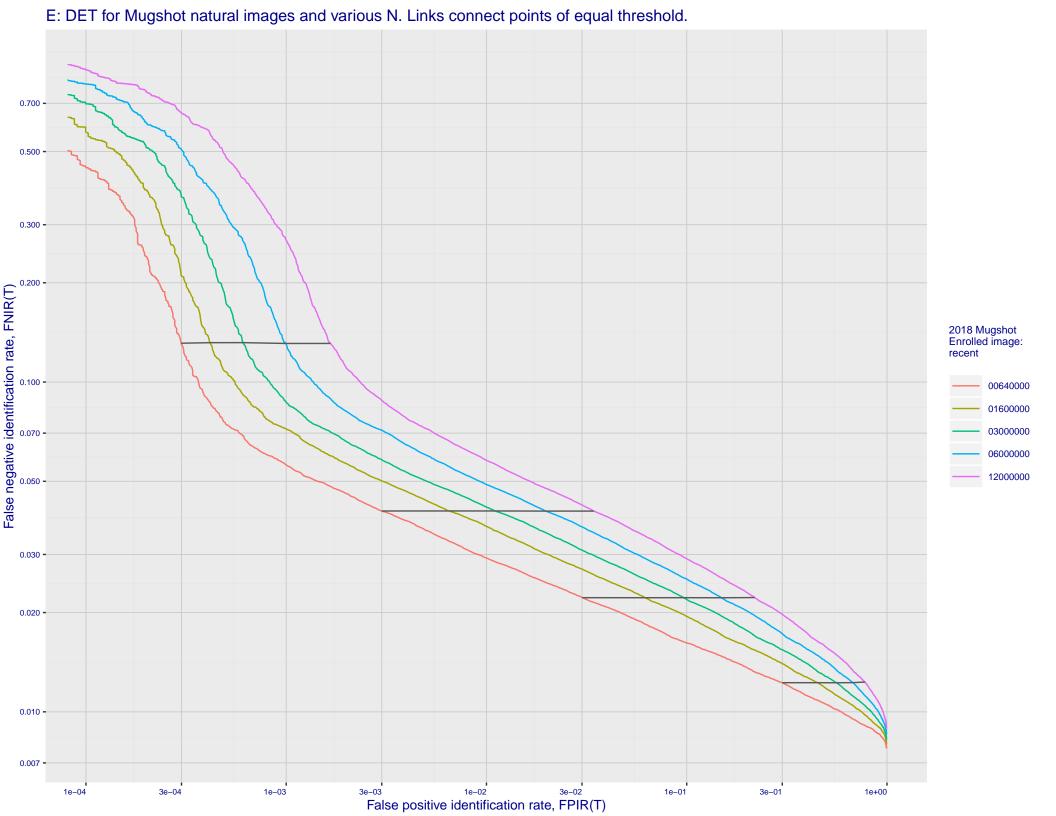
A: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Mugshot visa-border natural 0.700 -0.500 -0.300 -False negative identification rate, FNIR(T) enrolment\_style random-ONE-MATE recent-ONE-MATE unconsolidated-ALL-MATES unconsolidated-ANY-MATE 0.020 -0.010 -0.007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

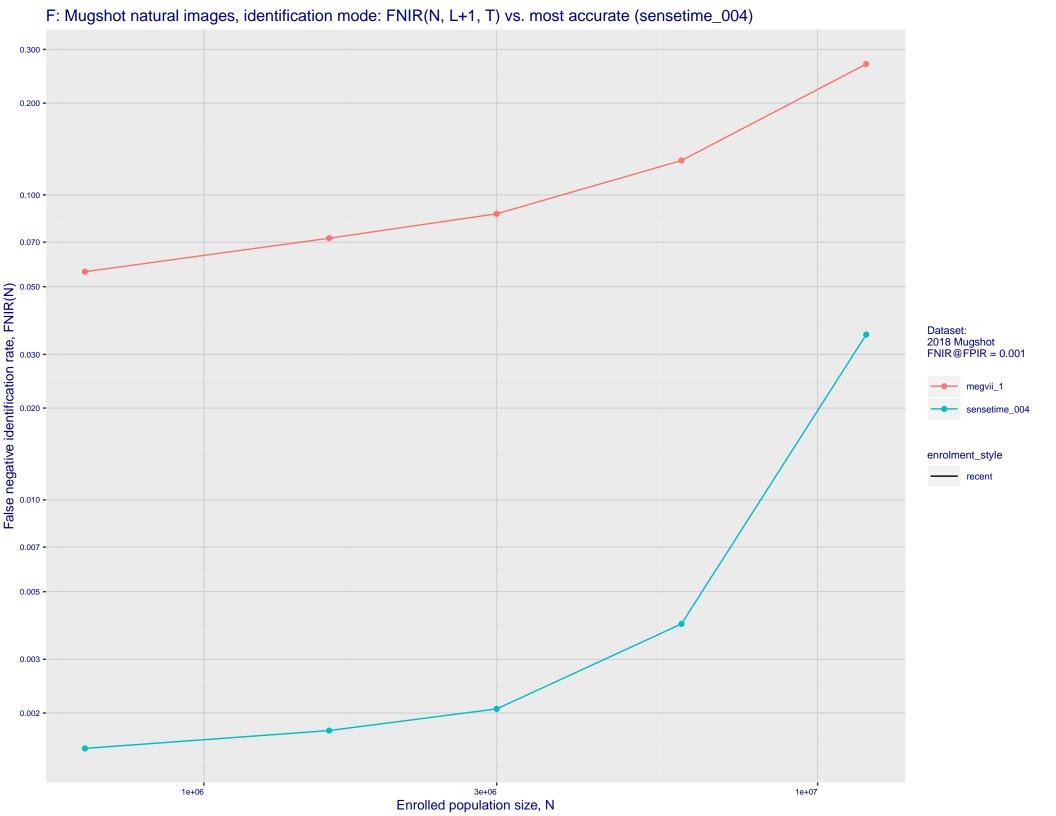
B: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



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 -7e-02 - 7e-02 - 7e-03 Enrolled images: recent N = 1600000Mugshot natural 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: megvii\_1

Developer: Megvii/Face++

Submission Date: 2018\_10\_28

Template size: 4096 bytes

Template time (2.5 percentile): 630 msec

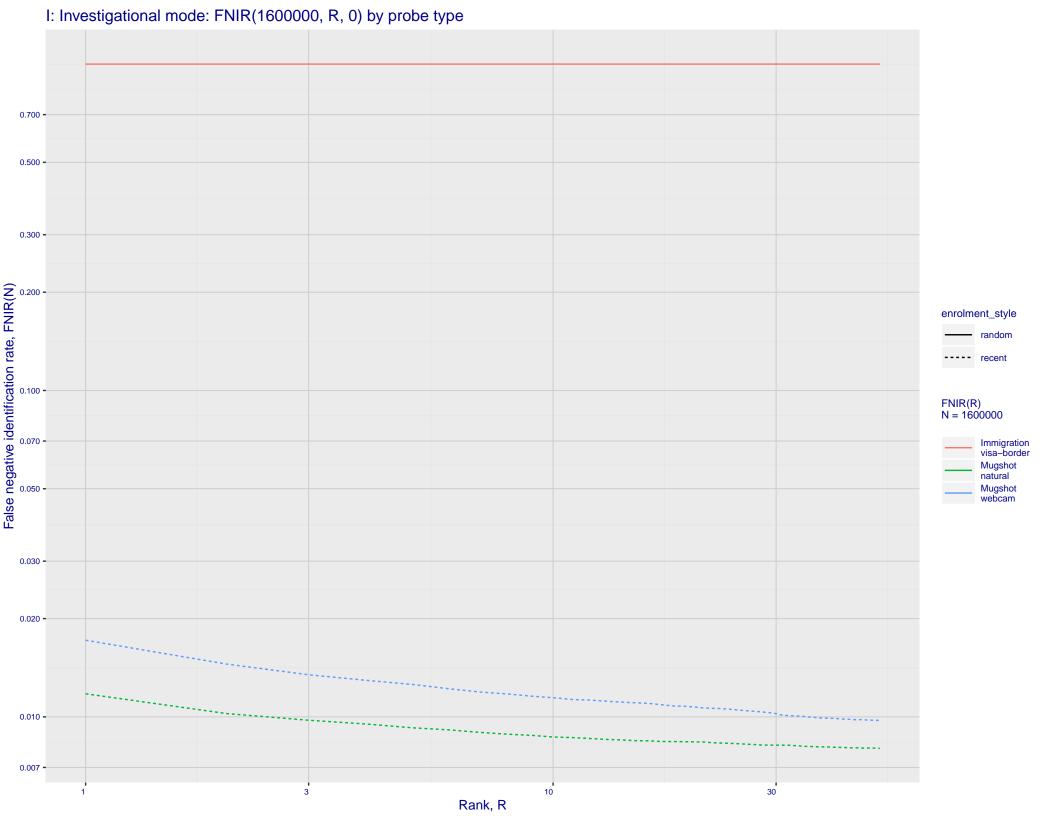
Template time (median): 631 msec

Template time (97.5 percentile): 690 msec

Frontal mugshot investigation rank 127 -- FNIR(1600000, 0, 1) = 0.0118 vs. lowest 0.0010 from sensetime\_004 natural investigation rank 46 -- FNIR(1600000, 0, 1) = 0.0172 vs. lowest 0.0067 from sensetime\_003 natural investigation rank 104 -- FNIR(1600000, 0, 1) = 1.0000 vs. lowest 0.0014 from visionlabs\_009

Frontal mugshot identification rank 98 -- FNIR(1600000, T, L+1) = 0.0721 vs. lowest 0.0018 from sensetime\_004 natural identification rank 50 -- FNIR(1600000, T, L+1) = 0.0971 vs. lowest 0.0122 from sensetime\_003 natural identification rank 99 -- FNIR(1600000, T, L+1) = 1.0000 vs. lowest 0.0059 from sensetime\_004

H: Investigational mode: FNIR(N, 1, 0) vs. most accurate (yitu\_4) Immigration Mugshot Mugshot visa-border natural webcam 0.700 -0.500 -0.300 -0.200 -Ealse negative identification rate, FNIR(N) enrolment\_style random --- recent FNIR@Rank = 1 megvii\_1 0.005 0.003 -0.002 -0.001 -1e+07 1e+06 1e+06 3e+06 1e+07 1e+06 3e+06 Enrolled population size, N



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 7000 -- Log Model ---- Power Law Model 5000 3000 -2000 -1000 -700 -500 300 200 -3e+06 1e+06 1e+07 Enrolled population size, N, one image per person

Search Duration (milliseconds)