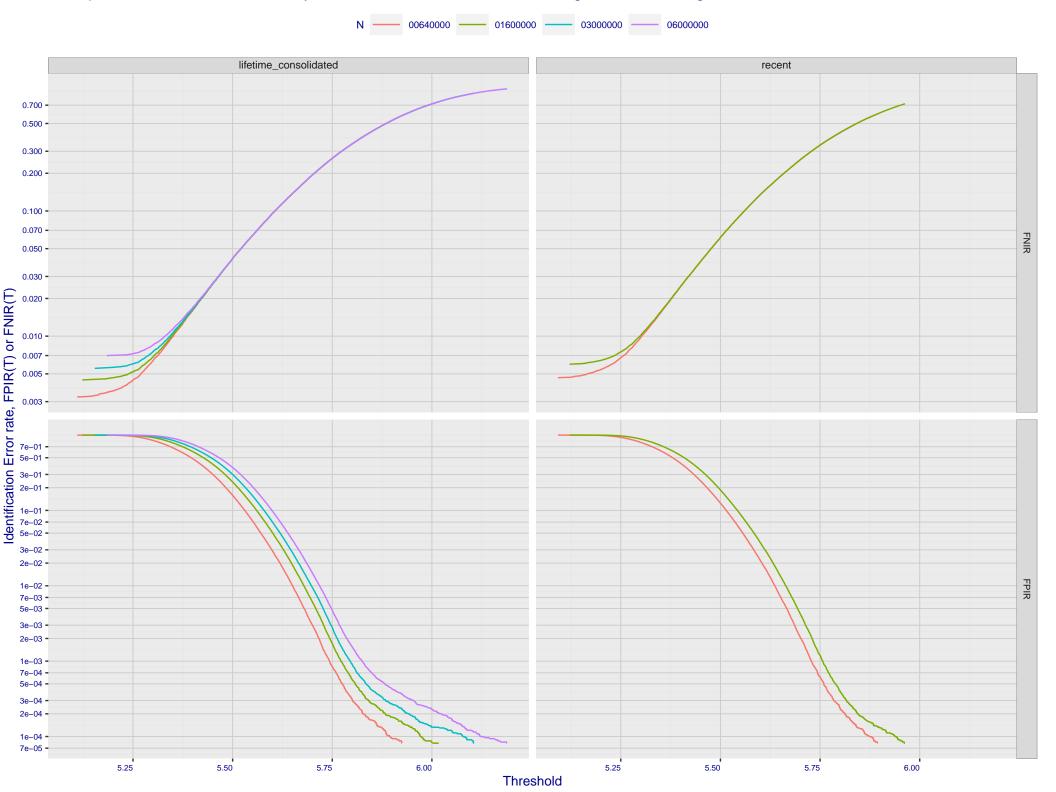
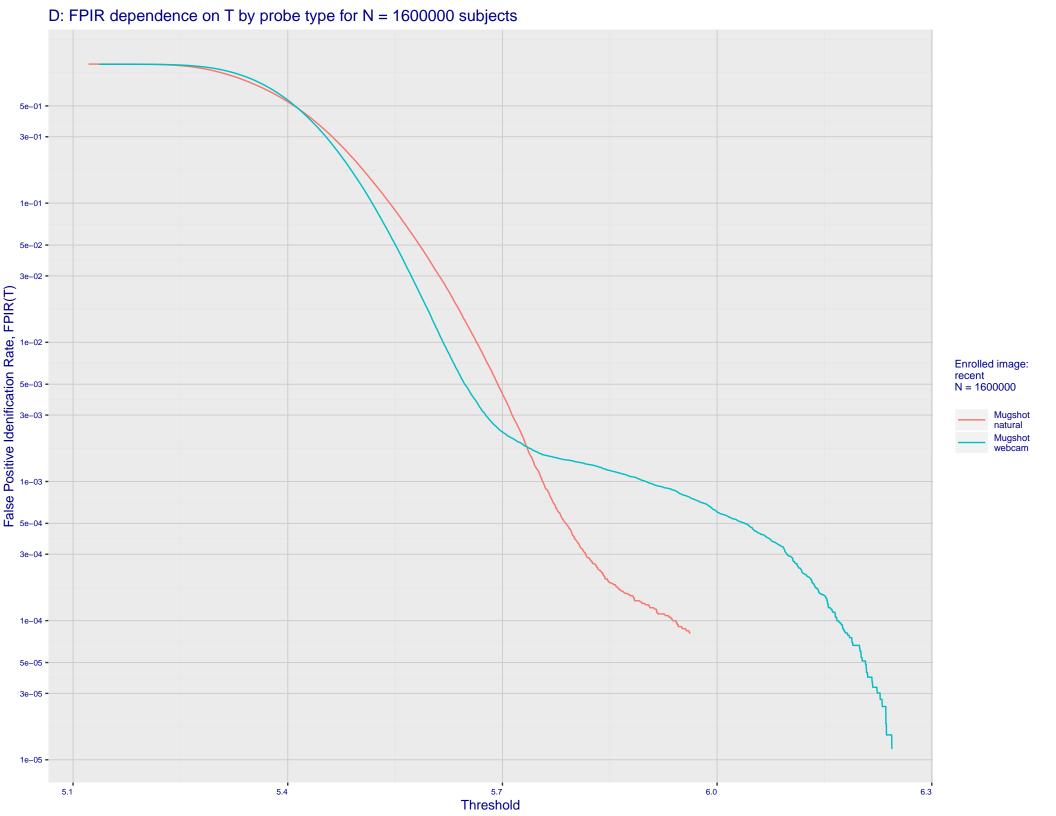
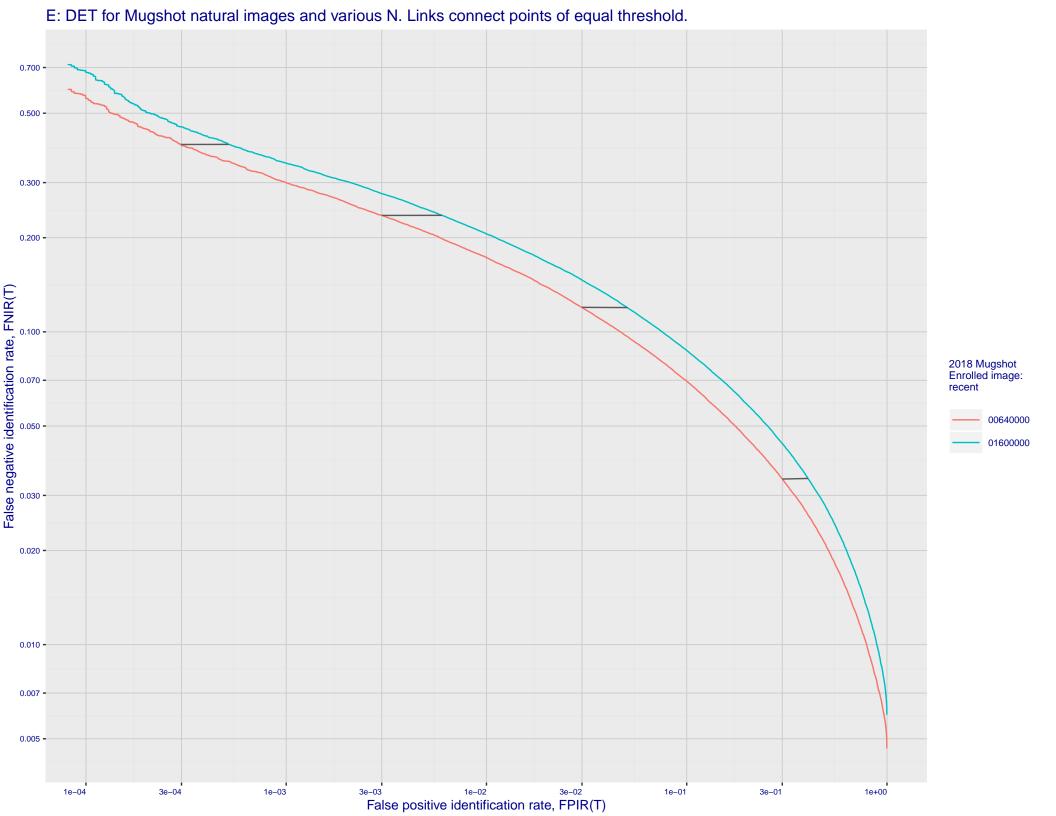
A: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Immigration Immigration Mugshot visa-kiosk visa-border natural 0.700 0.500 0.300 -False negative identification rate, FNIR(T) enrolment\_style consolidated-ONE-MATE random-ONE-MATE recent-ONE-MATE 0.020 0.010 -0.007 -0.005 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-03 1e-03 3e-03 1e-02 3e-03 1e-03 False positive identification rate, FPIR(T)

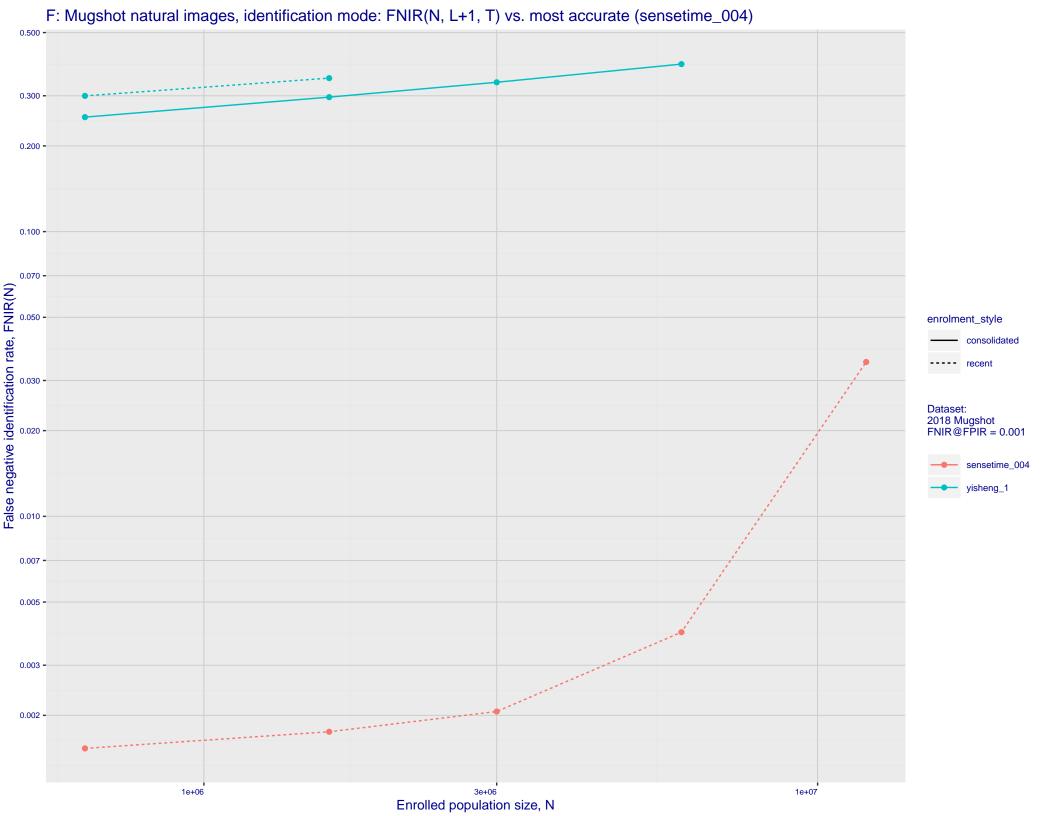
B: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images



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 -5e-02 -3e-02 -2e-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: yisheng\_1

Developer: Zhuhai Yisheng Electronics Technology

Submission Date: 2018\_06\_19

Template size: 3704 bytes

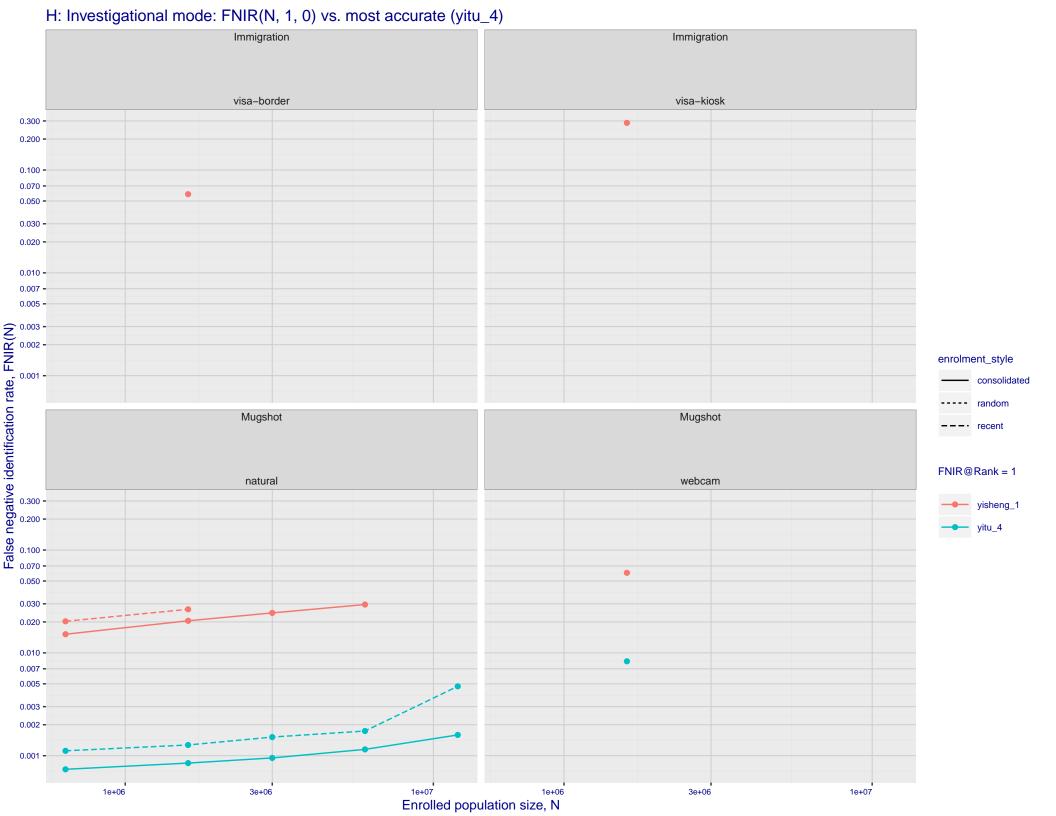
Template time (2.5 percentile): 363 msec

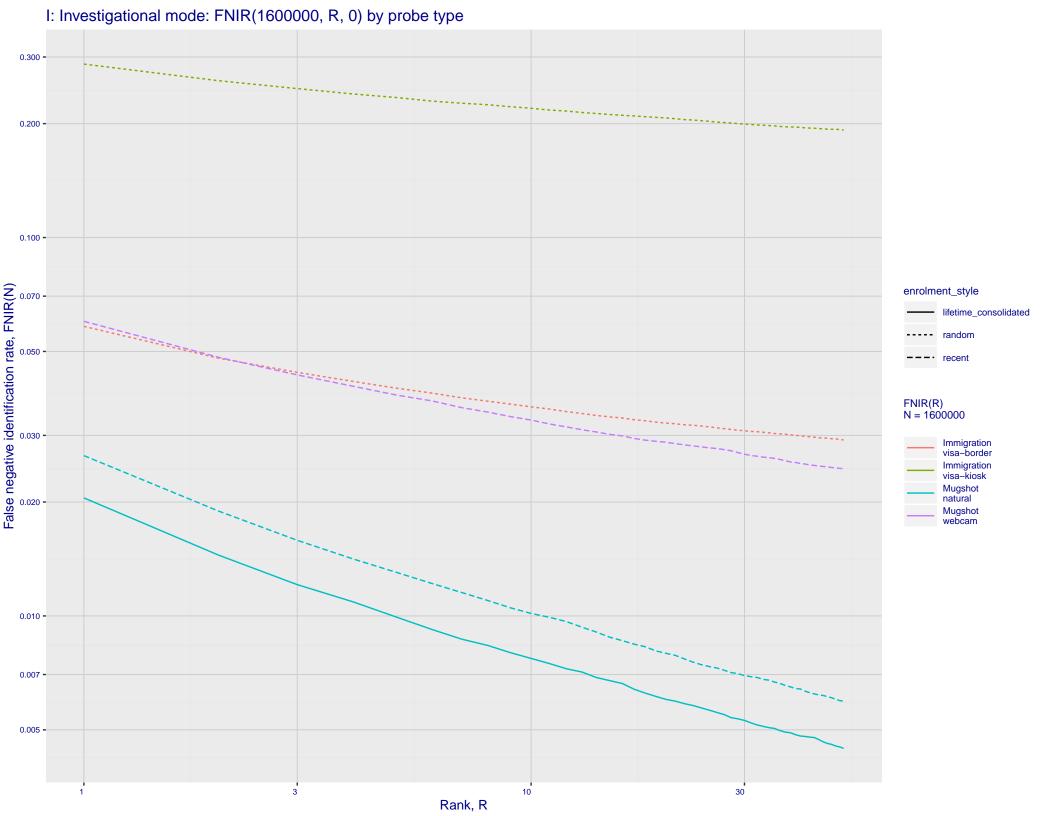
Template time (median): 384 msec

Template time (97.5 percentile): 423 msec

Frontal mugshot investigation rank 165 — FNIR(1600000, 0, 1) = 0.0265 vs. lowest 0.0010 from sensetime\_004 natural investigation rank 142 — FNIR(1600000, 0, 1) = 0.0601 vs. lowest 0.0067 from sensetime\_003 natural investigation rank 80 — FNIR(1600000, 0, 1) = 0.0583 vs. lowest 0.0014 from visionlabs\_009 natural investigation rank 79 — FNIR(1600000, 0, 1) = 0.2874 vs. lowest 0.0694 from cib\_000

Frontal mugshot identification rank 188 — FNIR(1600000, T, L+1) = 0.3460 vs. lowest 0.0122 from sensetime\_004 natural identification rank 188 — FNIR(1600000, T, L+1) = 0.8078 vs. lowest 0.0122 from sensetime\_003 natural identification rank 81 — FNIR(1600000, T, L+1) = 0.6664 vs. lowest 0.0059 from sensetime\_004 natural identification rank 76 — FNIR(1600000, T, L+1) = 0.9236 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 - Log Model ---- Power Law Model 1000 500 -

1e+06 Enrolled population size, N, one image per person

8e+05

Search Duration (milliseconds)