A: 1:N error tradeoff by dataset and enrollment type. N = 1600000 individuals Mugshot natural 0.700 0.500 -0.300 -False negative identification rate, FNIR(T) enrolment\_style consolidated-ONE-MATE recent-ONE-MATE 0.030 -0.020 -0.010 -

3e-02

1e-01

3e-01

1e+00

1e-02

False positive identification rate, FPIR(T)

0.007

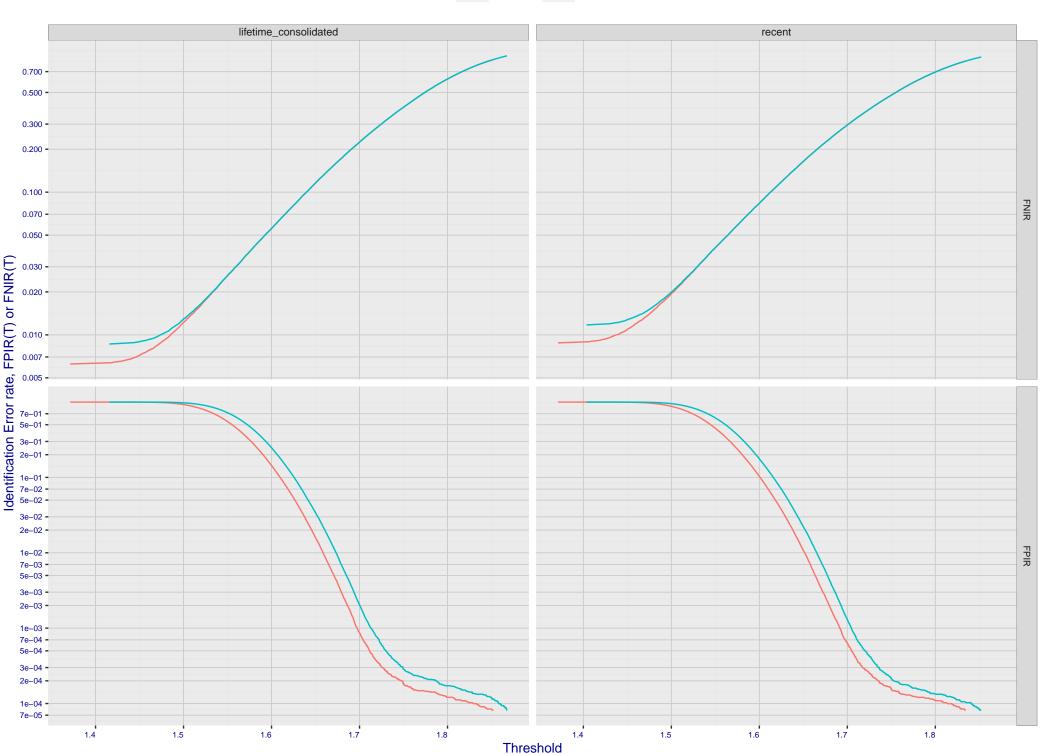
1e-04

3e-04

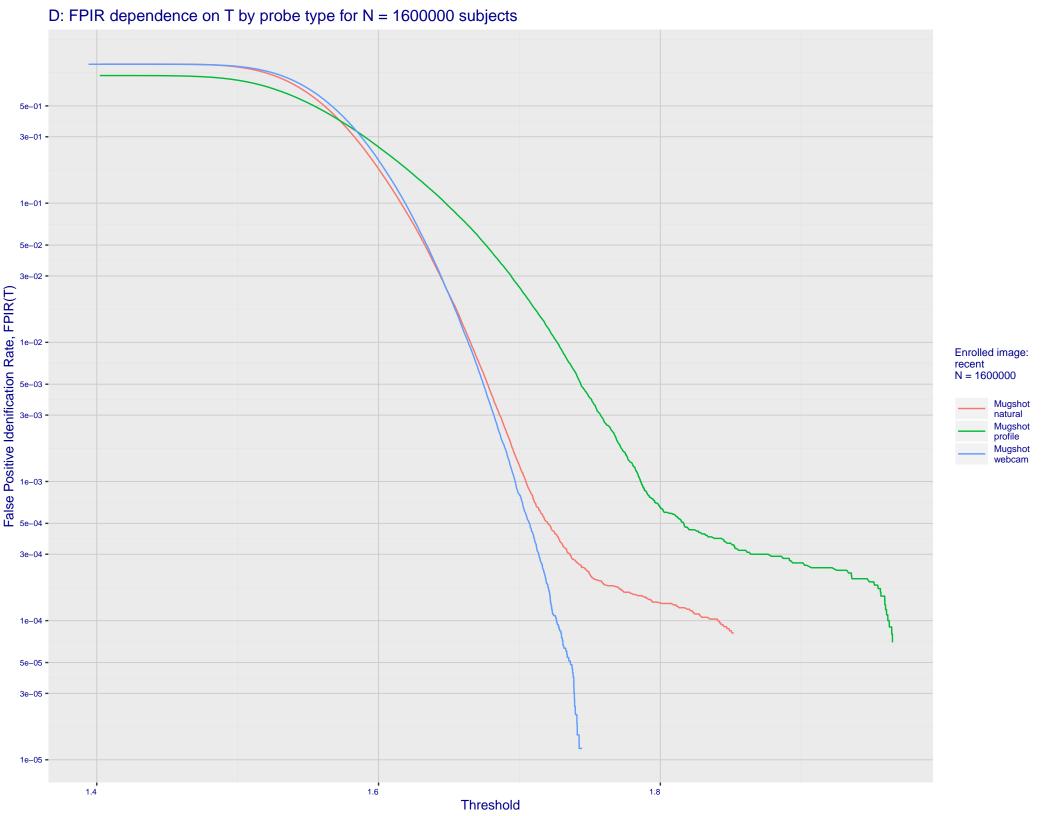
1e-03

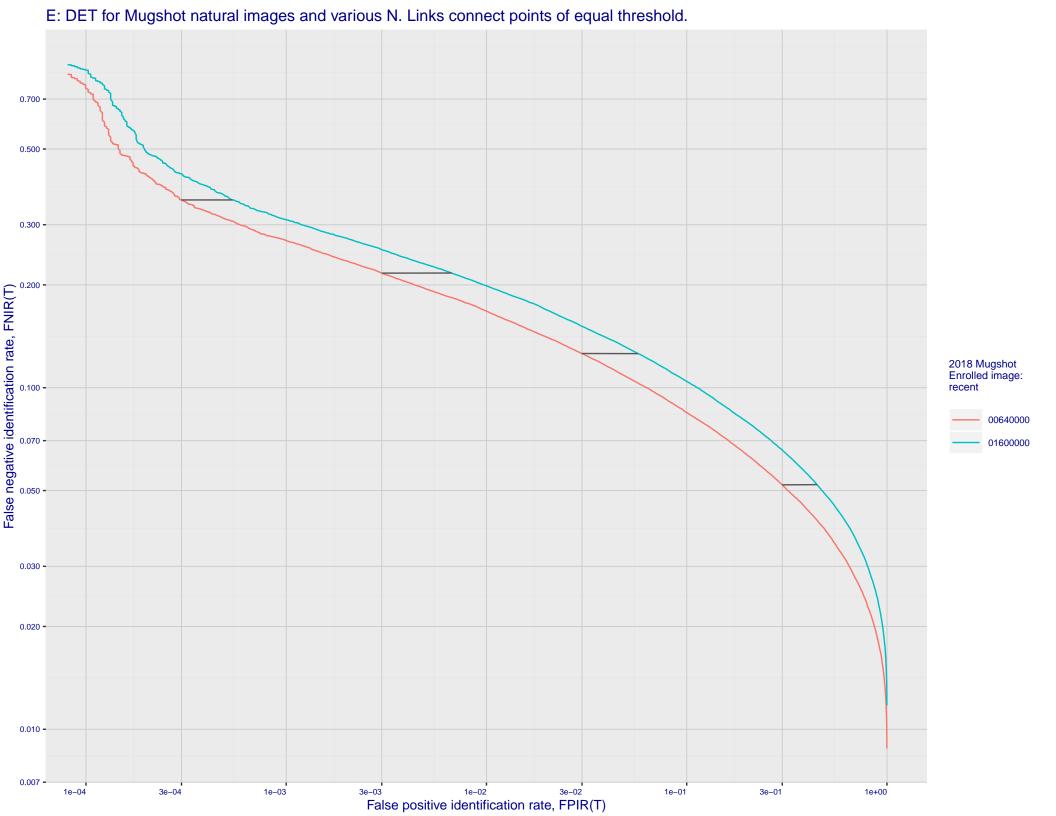
B: Dependence of error rates on T by number enrolled identities, N, for Mugshot natural images

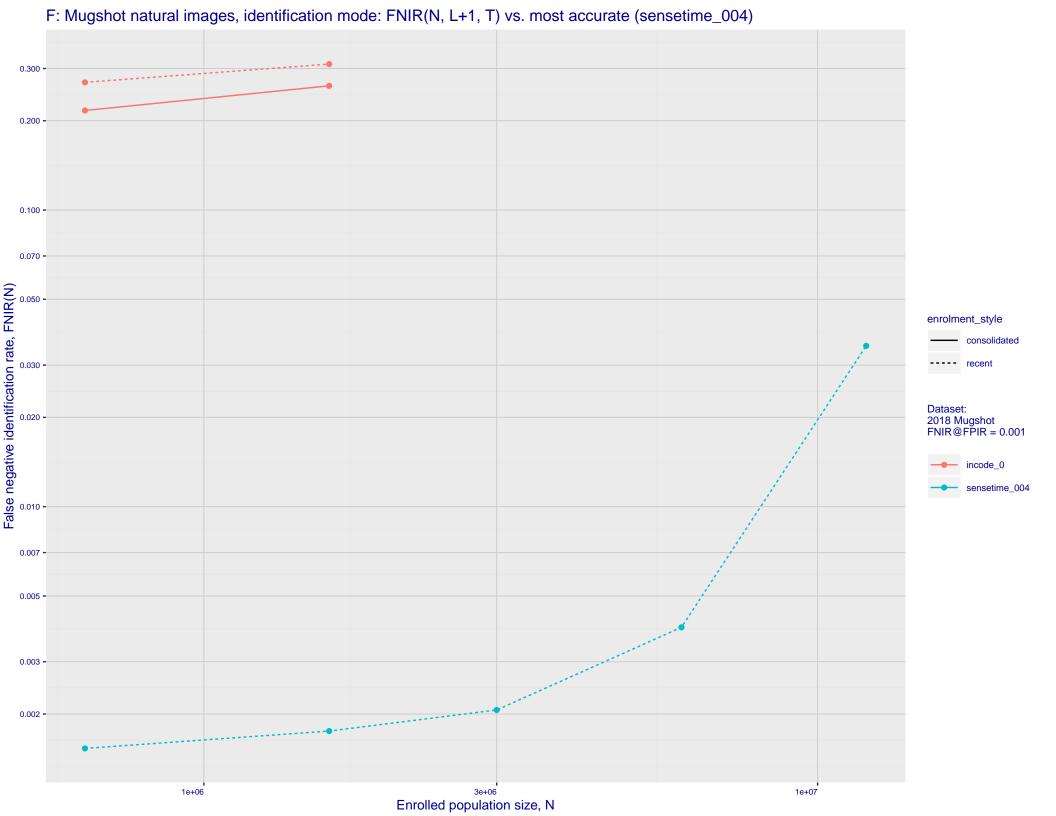




C: FPIR vs. Selectivity for mugshot images, N = 1600000 subjects enrolled with one recent mate 7e+01 5e+01 3e+01 2e+01 1e+01 7e+00 -5e+00 -3e+00 -2e+00 -1e+00 -7e-01 -5e-01 -3e-01 -2e-01 -1e-01 -Enrolled images: recent N = 1600000 7e-02 -5e-02 -S 3e-02 - 1e-02 -Mugshot natural Mugshot profile Mugshot 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 -3e-03 1e-05 3e-05 1e-04 3e-04 1e-01 3e-01 False Positive Idenification Rate, FPIR(T)







## G: Datasheet

Algorithm: incode\_0

Developer: Incode Technologies Inc

Submission Date: 2018\_06\_29

Template size: 1024 bytes

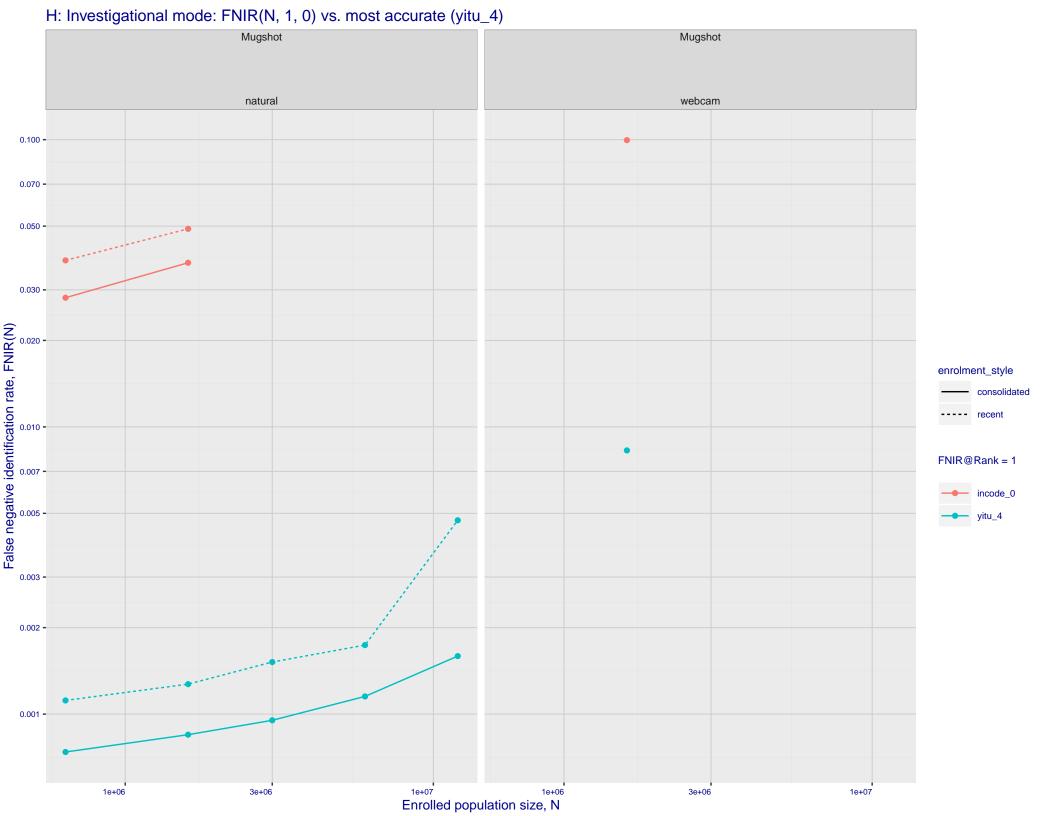
Template time (2.5 percentile): 168 msec

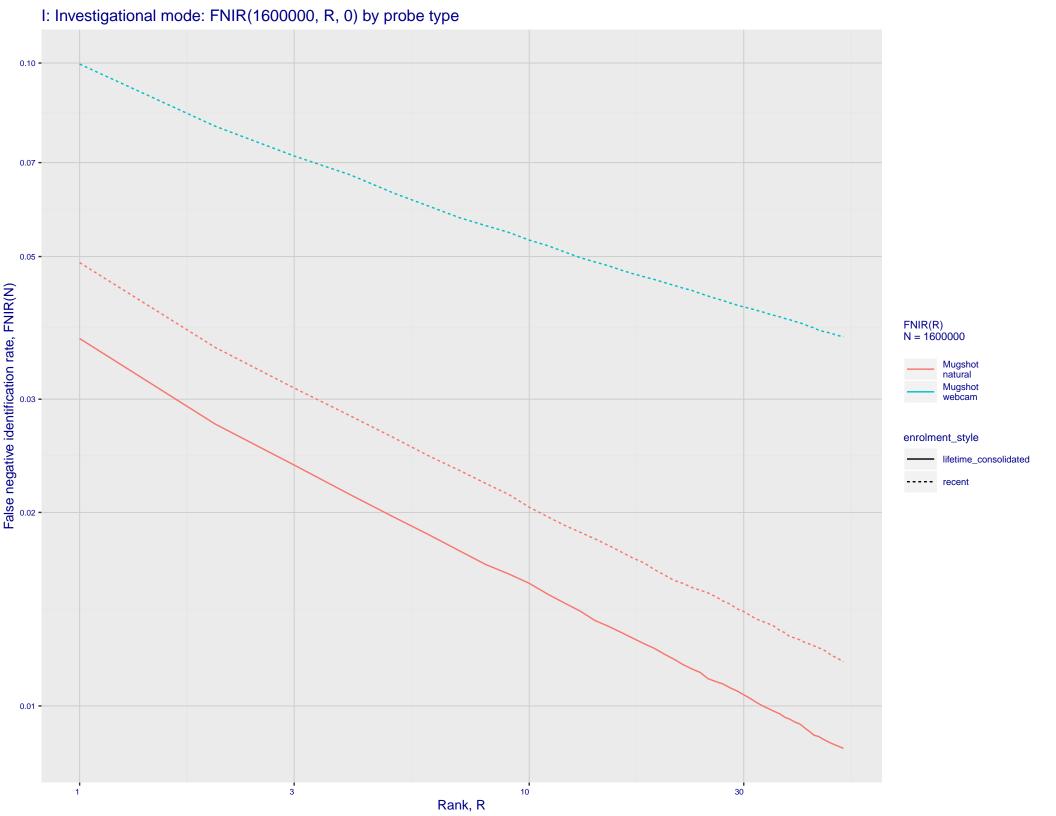
Template time (median): 189 msec

Template time (97.5 percentile): 219 msec

Frontal mugshot investigation rank 190 — FNIR(1600000, 0, 1) = 0.0489 vs. lowest 0.0010 from sensetime\_004 natural investigation rank 165 — FNIR(1600000, 0, 1) = 0.0996 vs. lowest 0.0067 from sensetime\_003 natural investigation rank 226 — FNIR(1600000, 0, 1) = 0.9075 vs. lowest 0.0492 from paravision\_005 natural investigation rank 226 — FNIR(1600000, 0, 1) = 0.9075 vs. lowest 0.0492 from paravision\_005

Frontal mugshot identification rank 184 — FNIR(1600000, T, L+1) = 0.3104 vs. lowest 0.0018 from sensetime\_004 natural identification rank 161 — FNIR(1600000, T, L+1) = 0.4195 vs. lowest 0.0122 from sensetime\_003 natural identification rank 100 — FNIR(1600000, T, L+1) = 0.9949 vs. lowest 0.1020 from sensetime\_004





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 3000 2000 -1000 -700 -500 -300 -200 -1e+06 8e+05 Enrolled population size, N, one image per person

Search Duration (milliseconds)